



**Industria y Comercio**

S U P E R I N T E N D E N C I A

Delegatura de propiedad Industrial

División de ~~Nuevas Creaciones~~

**PCT**  
SOLICITUD

## PATENTE DE INVENCION

21. EXPEDIENTE No.

**06-13058**

54. TÍTULO

Montaje de carcasson para bomba

51. CLASIFICACIÓN INTERNACIONAL

F 04 D 29/42, 29/44, 7/04

71. SOLICITANTE

Weir Worman Ltd.

DOMICILIO

New South Wales Australia

74. APODERADO

Dilia Maria Rodriguez D'Alencar

22. BOGOTÁ, D. C.,

Feb. 8/06

**FORMULARIO ÚNICO DE SOLICITUD DE PATENTE**  
**PCT**  
**ENTRADA EN FASE NACIONAL**

|                                                                                                                                                                        |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) <b>SOLICITUD DE:</b>                                                                                                                                                |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |
| <input checked="" type="checkbox"/> Patente de invención                                                                                                               |                                                                                                                                                                                                                                                            | <input type="checkbox"/> Patente de Modelo de Utilidad |                                                                                                                                                                                                                                 |
| <input type="checkbox"/> Capitulo I.                                                                                                                                   |                                                                                                                                                                                                                                                            | <input checked="" type="checkbox"/> Capitulo II.       |                                                                                                                                                                                                                                 |
| 2) <b>SOLICITANTE</b><br>(71)                                                                                                                                          | <b>Nombre:</b> WEIR WARMAN LTD.<br><br><b>Dirección:</b> 1 Marden Street, Artamon, New South Wales 2064, Australia<br><br><b>Nacionalidad o domicilio:</b> New South Wales, Australia<br><br><b>Lugar de constitución:</b> Australia                       |                                                        | <b>IDENTIFICACIÓN</b><br><br>C.C. <input type="checkbox"/> NIT: <input type="checkbox"/><br><br>C.E. <input type="checkbox"/> OTRO <input type="checkbox"/><br><br>Cual _____<br><b>NÚMERO</b> _____                            |
|                                                                                                                                                                        | <b>Teléfono:</b> _____ <b>Fax:</b> _____<br><b>E. Mail:</b> _____                                                                                                                                                                                          |                                                        |                                                                                                                                                                                                                                 |
| 3) <b>REPRESENTANTE APODERADO</b>                                                                                                                                      | <b>Nombre:</b> DILIA MARIA RODRIGUEZ D'ALEMAN<br><br><b>Dirección:</b> Carrera 11 N°. 86-53 Piso 6 Bogotá D.C.<br><br><b>Teléfono:</b> 6181088 <b>Fax:</b> 6350824<br><b>E. Mail:</b> <a href="mailto:info@clarkemodet.com.co">info@clarkemodet.com.co</a> |                                                        | <b>IDENTIFICACIÓN</b><br><br>C.C. <input checked="" type="checkbox"/> NIT: <input type="checkbox"/><br><br>C.E. <input type="checkbox"/> OTRO <input type="checkbox"/><br><br><b>NÚMERO:</b> 41.654.882<br><b>TP:</b> 20824 CSJ |
|                                                                                                                                                                        |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |
| 4) <b>INVENTOR (ES)</b><br>(72)                                                                                                                                        | <b>Nombre:</b> 1. BURGESS, Kevin, Edward<br><br><b>Dirección:</b> 37 Christel Avenue, Carlingford, New South Wales 2118, Australia<br><br><b>Nacionalidad o Domicilio:</b> Australiano                                                                     |                                                        |                                                                                                                                                                                                                                 |
| 5) <b>PCT (86)</b><br>Solicitud Internacional No. PCT/AU2004/001153 Fecha: Agosto 30, 2004<br><br>Publicación Internacional No. WO2004/024243 A1 Fecha: Marzo 17, 2005 |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |
| 6) <b>Título (54) MONTAJE DE CARCASA PARA BOMBA</b>                                                                                                                    |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |
| 7) <b>Clasificación Internacional: F04D 29/42, 29/44, 7/04</b>                                                                                                         |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |
| 8) <b>PRIORIDAD</b>                                                                                                                                                    | 33) País de Origen                                                                                                                                                                                                                                         | (32) Fecha                                             | (31) Número de Solicitud                                                                                                                                                                                                        |
| SI <input checked="" type="checkbox"/> NO <input type="checkbox"/>                                                                                                     | AUSTRALIA                                                                                                                                                                                                                                                  | Sept. 4, 2003                                          | 2003904804                                                                                                                                                                                                                      |
| 9) <b>Comprobante de pago N°. 06-7,289 Fecha: Enero 27, 2006</b>                                                                                                       |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |
| Instrucciones para el diligenciamiento del presente formulario. Ver reverso de esta pagina                                                                             |                                                                                                                                                                                                                                                            |                                                        |                                                                                                                                                                                                                                 |

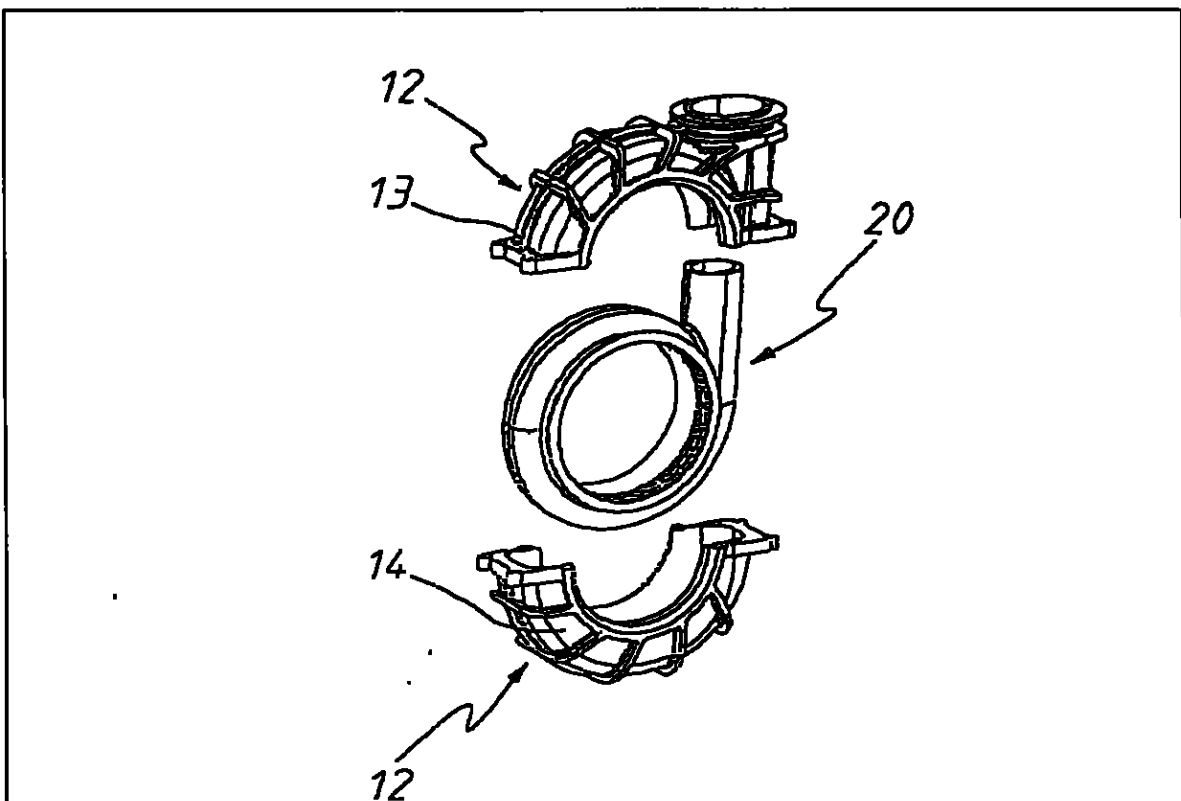
9

10)

ANEXOS

- ☒ Comprobante de pago de la tasa de presentación de la solicitud
- ☐ Comprobante de pago por reivindicación de prioridad
- ☐ Documento que acredita la existencia y representación legal cuando el solicitante sea persona Jurídica
- ☐ Poderes, si fuera el caso
- ☐ Documento de cesión del inventor al solicitante o a su causante
- ☐ Declaraciones
- ☒ Copia de la solicitud Internacional. (Resumen, descripción, reivindicación, Dibujos).
- ☒ Traducción de la solicitud internacional al castellano. (Resumen, descripción, reivindicación, Dibujos)
- ☒ Copia del examen preliminar efectuado por la IPEA
- ☐ De ser el caso, copia del contrato de acceso
- ☐ De ser el caso, documento que acredite la licencia o autorización de uso de conocimientos tradicionales de las comunidades indígenas
- ☐ De ser el caso, certificado de depósito del material biológico
- ☐ Arte final 12 x 12 y 6 x 6 cm
- ☐ De ser el caso, información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el mismo titular o su causante, relacionados parcial o totalmente con la invención de esta solicitud.
- ☒ Otros:
  1. Reporte internacional de búsqueda
  2. Opinión escrita de la autoridad de búsqueda internacional
  3. Solicitud PCT Capítulo II
  4. Notificación del recibo de la copia
  5. Notificación de la presentación de la prioridad

11) FIGURA CARACTERÍSTICA:



12) Solicitud concesión de la patente,

NOMBRE: DILIA RODRÍGUEZ D'ALEMAN

FIRMA: *[Handwritten Signature]*  
C.C. 41.654.882 de Bogotá TP 20824 CSJ

Instrucciones para el diligenciamiento del presente formulario. Ver reverso de esta pagina

2945  
M

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

SUPERINTENDENCIA Y COMERCIO  
Radicacion : 66413658 (66688888) folios: 77  
Fecha (PMD): 2006-02-09 17:00:00  
Tramite : 011 PCI-PATENT 379 FASE NAL.I 411 PRESENTAC  
Dependencia: 2420 DIVISION DE NUEVAS CREACIONES

RECIBO OFICIAL DE CAJA : 06 - 7,289  
FECHA : ENERO 27 DE 2006

\*\*\*\*\* CONSIGNACION \*\*\*\*\*

| DEPOSITANTE               | TIPO PAGO    | BANCO         | CUENTA      | No. PAGO | FECHA PAGO | Vr. PAGO     |
|---------------------------|--------------|---------------|-------------|----------|------------|--------------|
| CLARKE NODET Y CO. COLOMB | CONSIGNACION | BANCO POPULAR | 050-00110-6 | 49044331 | 27/01/2006 | 3,364,000.00 |

\*\*\*\*\* CONCEPTO \*\*\*\*\*

| CANT. | RENTISTICO  | CONCEPTO                          | TOTAL CONCEPTO |
|-------|-------------|-----------------------------------|----------------|
| 1     | 50005-01-01 | SOLICITUDES                       |                |
| 1     |             | TRAMITES DE SOL. DE PATENTE DE IN | 463,000.00     |
|       |             | TOTAL :                           | 463,000.00     |

CON: CUATROCIENTOS SESENTA Y TRES MIL PESOS

RESPONSABLE : \_\_\_\_\_  
RECIBO DE CAJA APLICADO AL EXPEDIENTE No. \_\_\_\_\_

TRADUCCIÓN OFICIAL No. 04/014 de un documento escrito en Inglés, el cual para su identificación se sella con el sello del traductor al tiempo con la presente. Esta traducción ha sido preparada por Juan Pablo Piedrahita Aguilera, Traductor e Intérprete Oficial debidamente reconocido de conformidad con el Certificado de Idoneidad Profesional No. 0045 expedido por la Universidad Nacional de Colombia, por el Ministerio de Relaciones Exteriores y autorizado por el Ministerio del Interior y de Justicia, por resolución número 718 de 2003.

(Se traduce un Poder otorgado por la compañía Weir Warman Ltd., con fecha Diciembre 16, 2003, Apostilla No. T4185, escritos en inglés.)

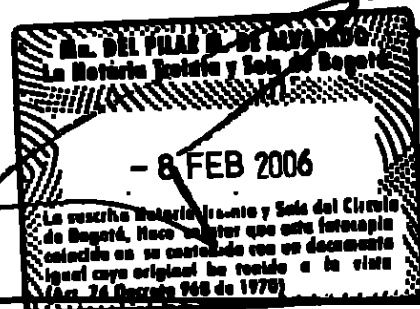
## COLOMBIA

(Dirección en español)

### PODER

El suscrito, Doug Jones representante legal de Weir Warman Ltd., sociedad constituida y existente bajo las leyes de Australia desarrollando su actividad comercial en la actualidad, domiciliada en 1 Marden Street, Artamon, New South Wales 2064, Australia, por el presente otorgamos Poder a DILIA MARÍA RODRÍGUEZ D'ALEMÁN, identificada con cédula de ciudadanía No. 41.654.882 de Bogotá y Tarjeta Profesional 20824 y CLAUDIA LUCIA CARO RAMIREZ, identificada con Tarjeta Profesional 36448 y cédula de ciudadanía No 40.017.374 de Tunja, con domicilio en Santafé de Bogotá, Colombia, para que actuando en su orden en nombre de la otorgante la representen ante cualquier entidad, autoridad y/o persona, especialmente ante las del orden Administrativo, Contencioso Administrativo, Judicial, Tribunales de Arbitramento y/o cualquier otro en lo referente a la siguiente:

- 1) Solicitar, tramitar, obtener y/o registrar cualesquiera de las modalidades de Propiedad Industrial, tales como: Patentes de Invención, Modelos de Utilidad; Diseños Industriales, variedades vegetales, Marcas, Lemas, Nombres y



Enseñas Comerciales y Denominaciones de Origen; así como sus renovaciones, prórrogas, traspasos, cambios de nombre y/o domicilio, contratos y licencias.

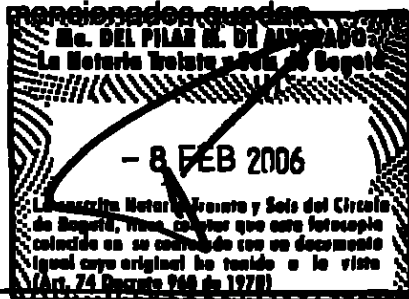
2) Solicitar, tramitar, obtener, y/o registrar derechos de autor, en cualquiera de sus presentaciones así como la protección de secretos industriales y know-how.

3) Solicitar, tramitar, obtener y/o registrar registros sanitarios, permisos y/o licencias de funcionamiento; así como sus renovaciones o prórrogas, cesiones, traspasos, cambios de nombre y/o domicilio, contratos y licencias.

4) Ejercer acciones de oposición, observación, reclamos, reivindicaciones, reconsideración, reposición, apelación, cancelación administrativa o judicial, nulidad, protección al consumidor, concesión de licencias, protección de secretos industriales y demás acciones y recursos relacionados con derechos derivados de los asuntos arriba indicados y en contra de la competencia desleal, acciones derivadas de la obtención o explotación de licencias, acciones de indemnización de perjuicios. También podrán intervenir en juicios civiles, comerciales, penales, contencioso-administrativos, tutelas y de policía; acciones o juicios promovidos por el mandante o contra él.

5) Registrar nombres de dominio ante la entidad competente.

6) En el ejercicio de este mandato los mandatarios arriba mencionados quedan



facultados para: conciliar, cancelar, transigir, aceptar cláusulas compromisorias, desistir, recibir y tomar posesión de la cosa objeto de litigio y renunciar o desistir derechos concedidos o en curso de concesión, admitir los hechos del proceso.

7) Ratificar o no la agencia oficiosa.

8) Así mismo facultamos a los mencionados apoderados para recibir notificaciones y designar apoderados judiciales o extrajudiciales, sustituir el presente poder y revocar las sustituciones que hicieren.

Dado y firmado en PORT MACQUAIRE, AUSTRALIA, hoy día 16 de Diciembre de 2003.

Por: (Firmado)Ilegible

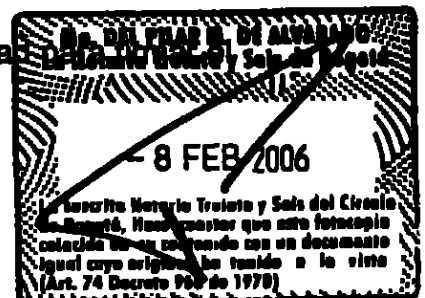
**CERTIFICADO NOTARIAL (Cuando el solicitante es una SOCIEDAD)**

(Poderes otorgados en El Salvador, México, Estados Unidos de América y Venezuela)

Expedido hoy 16 de Diciembre del 2003, el suscrito Notario CERTIFICA que:

1). DOUG JONES, (nombre de quien firma el poder), mayor de edad y domiciliado en PORT MACQUAIRE, AUSTRALIA, suscribió el anterior documento.

2) El otorgante le es conocido personalmente y tiene capacidad



documento.

3) El otorgante ha suscrito el anterior documento en su calidad de Gerente –  
Propiedad Intelectual de la persona jurídica Weir Warman Ltd.

4) La mencionada persona jurídica con domicilio comercial en ARTARMON  
NSW, AUSTRALIA, está debidamente constituida, tiene actualmente existencia  
legal y el fin para el cual se otorga este poder se encuentra dentro de su objeto  
social.

5) El otorgante tiene en efecto la capacidad referida y su representación es  
legal y está autorizado para otorgar este poder.

6) Fundamento las certificaciones 3), 4) y 5) en los documentos auténticos que  
para tal fin me fueron exhibidos.

(Firmado) Ilegible, Notario Público

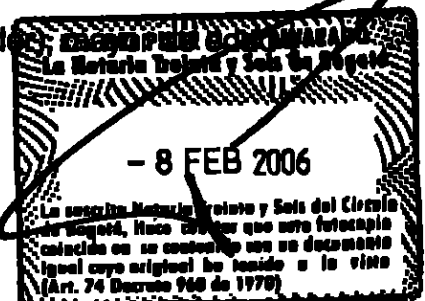
(Sello Notarial en Relieve)

Nota: El Consulado de Colombia debe autenticar la firma del Notario Público.

#### CERTIFICADO NOTARIAL (Individuos)

A los (en blanco) días del mes (en blanco), el Notario que suscribe DA FE de  
que:

1. DOUG JONES, (nombre de la persona que firma el poder)



8  
8

domiciliado en PORT MACQUARIE, AUSTRALIA, firmó en su presencia el documento que antecede, que conoce personalmente al otorgante y que está legalmente facultado para suscribir el documento.

(Firmado) Ilegible

Notario Público (Sello Notarial en Relieve)

NOTA: A continuación de lo anterior, el Cónsul de Colombia debe autenticar la firma del Notario público.

Para todos los demás países el Señor Cónsul de Colombia o ante quien se otorgue, debe expedir una certificación dejando constancia de: 1) la existencia legal de la sociedad, 2) que cumple actualmente con su objeto social, y 3) que la persona o personas que otorgan este poder estan facultadas para hacerlo. El Cónsul también certificará que los tuvo a la vista los documentos que prueban y acreditan tales circunstancias.

(Sello Notarial a Tinta: TERRY CURLEY, ABOGADO Y NOTARIO PÚBLICO, 8/114 WILLIAMS ST., PORT MACQUARIE N.S.W. 2444).

(Sello Pre-Impreso)

APOSTILLA

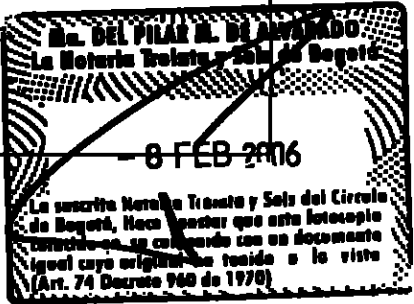
(Convención de la Haya de Octubre 5 de 1961)

1. País: Australia

Este documento público

2. Ha sido firmado por TERRY CURLEY

3. Obrando en calidad de Notario Público



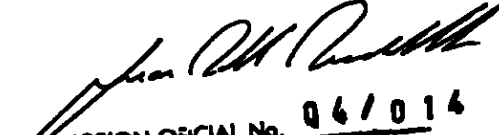
TRADUCCION OFICIAL No. 134  
JUAN PABLO PIEDRAHITA AGUILERA  
TRADUCCION E INTERPRETE OFICIAL  
RES. 718 DE MAYO 2003  
DEL MIN. INTERIOR Y DE JUSTICIA

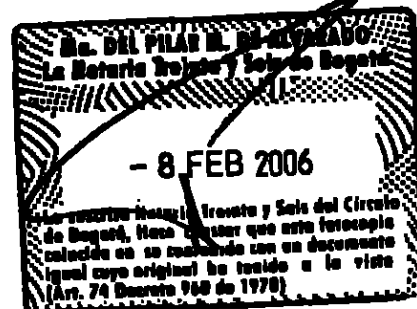
4. Lleva el sello/estampilla de Notario Público, Port Macquarie, New South Wales, Australia
- CERTIFICADO**
5. En Sydney
6. Hoy día Veintitrés de Diciembre, Dos Mil Tres
7. Por Andrew Richard Sutton, Departamento de Relaciones Exteriores y Comercio Exterior, Sydney, New South Wales, Australia
8. No. T 4185
9. Sello/Estampilla (Sello a Tinta del Departamento de Relaciones Exteriores y Comercio Exterior de Sydney)
10. Firma (Firmado)

Sello Rojo de Oblea con Cinta Verde

ES TRADUCCIÓN FIEL Y COMPLETA de la cual se deja copia en los archivos de esta oficina para su confrontación y a la cual me remito.

Bogotá, Enero 13, 2004.

  
TRADUCCIÓN OFICIAL No. 061014  
JUAN PABLO PIEDRAHÍTA AGUILERA  
TRADUCTOR E INTERPRETE OFICIAL  
RES. 718 DE MAYO 2003  
DEL MIN. INTERIOR Y DE JUSTICIA

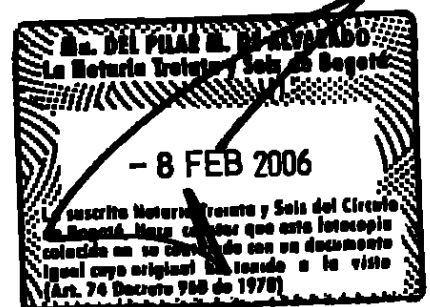




# APOSTILLE

(Convention de La Haye du 5 octobre 1961)

- |                              |                                                                                 |
|------------------------------|---------------------------------------------------------------------------------|
| 1. Country:                  | Australia                                                                       |
| This public document         |                                                                                 |
| 2. has been signed by        | Terry Curley                                                                    |
| 3. acting in the capacity of | Notary Public                                                                   |
| 4. bears the seal/stamp of   | Notary Public, Port Macquarie,<br>New South Wales, Australia.                   |
| Certified                    |                                                                                 |
| 5. at Sydney                 | 6. the Twenty-Third day of December<br>Two thousand and three.                  |
| 7. by Andrew Richard Sutton  | Department of Foreign Affairs and Trade,<br>Sydney, New South Wales, Australia. |
| 8. No. T 4185                |                                                                                 |
| 9. Seal/Stamp:               | 10. Signature                                                                   |



# COLOMBIA

Carrera 11 n° 93-43, Of. 404 Bogotá Colombia Tel: (57 1) 6350813-Fax: (57 1) 6350824-E-mail:clarkernodet@clarkernodet.com.co

## PODER

Yo (nosotros), abajo firmante(s)

en mi (nuestro) carácter de representante(s) legales de

una sociedad organizada y existente de acuerdo con las leyes de

y en actual cumplimiento de su objeto social, con domicilio en

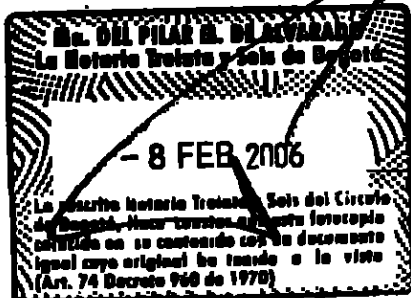
por el presente instrumento confiero (conferimos) poder especial a favor de DILIA MARIA RODRIGUEZ D'ALEMAN, con Cédula de Ciudadanía No. 41.634.882 de Bogotá, y tp. 20824 y CLAUDIA LUCIA CARO RAMIREZ, con Cédula de Ciudadanía No. 40.017.374 de Tunja, y tp. 36448, con domicilio en Bogotá, Colombia, para que actuando en su orden en nombre del (de la) otorgante le (la) representen ante cualquier entidad, autoridad y/o persona, especialmente ante las del orden Administrativo, Contencioso Administrativo, Judicial, Tribunales de Arbitramento y/o cualquier otro en lo referente a los siguientes asuntos:

- 1) Solicitar, tramitar, obtener y/o registrar cualquiera de las modalidades de Propiedad Industrial, tales como: patentes de invención, modelos de utilidad; diseños industriales, variedades vegetales, marcas, lemas, nombres y apellidos comerciales y denominaciones de origen; así como sus renovaciones, prórrogas, transferencias, cambios de nombre y/o domicilio, contratos y licencias.
- 2) Solicitar, tramitar, obtener y/o registrar derechos de autor, en cualquiera de sus presentaciones así como la protección de secretos industriales y know-how.
- 3) Solicitar, tramitar, obtener y/o registrar registros sanitarios, permisos y/o licencias de funcionamiento; así como sus renovaciones o prórrogas, transferencias, cambios de nombre y/o domicilio, contratos y licencias.
- 4) Ejercer acciones de oposición, observación, reclamos, reconsideración, repetición, apelación, cancelación administrativa o judicial, nulidad, protección al consumidor, concesión de licencias, protección de secretos industriales y demás acciones y recursos relacionados con derechos derivados de los asuntos arriba indicados y en contra de la competencia desleal, acciones derivadas de la obtención o explotación de licencias, acciones de indemnización de perjuicio. También podrá(n) intervenir en juicios civiles, comerciales, penales, contencioso-administrativos, tales y de policía; en acciones o juicios promovidos por el (la) demandante o en contra el (ella).
- 5) Registrar nombres de dominio ante la entidad competente.
- 6) En el ejercicio de este mandato los mandatarios arriba mencionados quedan facultados para: conciliar, cancelar, transigir, comprometer en árbitros, desistir, recibir y tomar posesión de la cosa objeto de litigio y renunciar o desistir a derechos concedidos o en curso de concesión, admitir los hechos del proceso.
- 7) Ratificar o no la agencia oficiosa.
- 8) Así mismo faculto (facultamos) a los mencionados apoderados para recibir notificaciones y designar apoderados judiciales o extrajudiciales, sustituir el presente poder y revocar las sustituciones que hicieren.

Hecho y firmado en

en

días de



## POWER OF ATTORNEY

I (we), the undersigned

legal representative(s) of

Weir Warman Ltd

an organization existing under the laws of

Australia

and in present execution of its business activity, domiciled at

1 Marden Street, Artarmon, New South Wales 2064, Australia

do hereby grant POWER OF ATTORNEY to DILIA MARIA RODRIGUEZ D'ALEMAN, identification card No. 41.634.882 of Bogotá, and tp. 20824 and CLAUDIA LUCIA CARO RAMIREZ, tp. 36448, identification card No. 40.017.374 of Tunja, residing in Bogotá, Colombia, to act in the order of their appointment in behalf of grantor before any entity, authority and/or natural or juridical person, specially before those Administrative, Administrative-Contentious, Judicial, arbitration courts, and/or any other, in all matters concerning the following:

- 1) To apply, process, obtain and/or register any of the modalities of Industrial Property, such as: Patents of Invention, Utility Model, Design, plant varieties; Marks, Slogans, Trade Names and emblems and appellations of Origin, as well as their renewals, assignments, changes of name and/or domicile, agreements and licenses.
- 2) To apply, process, obtain and/or register copyrights of any kind as well as protection of industrial secrets or know-how.
- 3) To apply, process, obtain and/or register sanitary registrations, operating authorizations and/or licenses, as well as their renewals or assignments, changes of name and/or domicile, agreements and licenses.
- 4) To bring actions of opposition, observations, claims, reconsideration, appeal or legal remedies, cancellations, nullity, protection to the consumer, granting of licenses, protection of trade secrets and other actions related with rights derived from the above-mentioned matters and against the unfair competition, actions resulting from the obtaining or exploitation of licenses, recovering damages actions. They can also intervene or participate in Civil, Commercial, Criminal or Contentious-Administrative Trials; the actions for writ mandamus, police actions, in actions, lawsuits or litigations instituted by the grantor or against him.
- 5) To register domain names before the competent entity.
- 6) To the effect of this mandate the above-named proxy are empowered to: conciliate, cancel, settle, submit to arbitration, withdraw and to receive and take possession of the litigation related object and waive or renounce the rights granted or in process of granting, admit the facts of the case.
- 7) To ratify or not the officious agency.
- 8) I (we) hereby appoint the afore mentioned attorneys with powers to receive notifications and to designate judicial and extrajudicial attorneys, substitute this Power of Attorney and to revoke such substitutions.

Granted and signed at Port Melbourne, Australia on this 16th day of December of 2003.

Signature

TRADUCCION OFICIAL No. 34714  
JUAN PABLO PIEDRAHITA AGUILERA  
TRADUCTOR E INTERPRETE OFICIAL  
R.D. 718 DE MAYO 2003

## CERTIFICADO NOTARIAL

(Cuando el solicitante es SOCIEDAD)

(Powers of attorney granted in: El Salvador, Estados Unidos, México y Venezuela)

A los \_\_\_\_\_ días del mes de \_\_\_\_\_ de \_\_\_\_\_  
el Notario que suscribe DA FE de que:

1. \_\_\_\_\_  
(nombre de la persona que firma el poder)  
mayor de edad y domiciliado \_\_\_\_\_  
y letra el documento que antecede.  
firmó de su puño
2. Conoce al (a la) otorgante y que este (a) está legalmente capacitado para el otorgamiento.
3. El otorgante ha firmado el referido documento en su carácter de \_\_\_\_\_  
de la persona jurídica \_\_\_\_\_
4. La citada persona jurídica con sede en \_\_\_\_\_ está legalmente constituida, que tiene actualmente existencia legal y que el acto para el cual se ha otorgado este poder está comprendido entre los que constituyen su objeto social.
5. El otorgante tiene efectivamente la representación que ostenta, que esta es legítima y que está facultado para otorgar este poder.
6. Las anteriores certificaciones de los puntos 3, 4 y 5, me constan porque he tenido a la vista los documentos auténticos.

Notario Público

NOTA: A continuación de lo anterior, el Consúl de Colombia debe autenticar la firma del Notario Público.

## CERTIFICADO NOTARIAL (Cuando el solicitante es INDIVIDUO)

A los \_\_\_\_\_ días del mes de \_\_\_\_\_ de \_\_\_\_\_  
el Notario que suscribe DA FE de que:

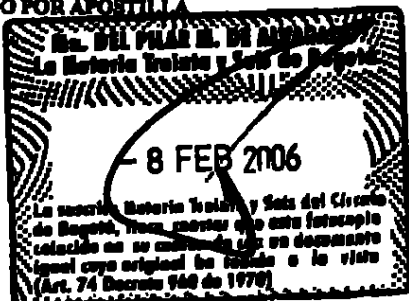
1. \_\_\_\_\_  
(nombre de la persona que firma el poder)  
mayor de edad y domiciliado en \_\_\_\_\_  
firmó en su presencia  
el documento que antecede, conoce al otorgante y que este está legalmente capacitado para el otorgamiento.

Notario Público

NOTA: A continuación de lo anterior, el Consúl de Colombia debe autenticar la firma del Notario Público.

Para todos los demás países el Señor Consúl de Colombia o ante quien se otorgue, debe expedir una certificación dejando constancia 1) de la existencia legal de la sociedad, 2) de que esta ejerce actualmente su objeto social, y 3) de que la persona o personas que otorgan el poder están facultadas para hacerlo, dejando constancia así mismo de que tuvo a la vista las pruebas que acrediten tales circunstancias.

## LEGALIZACIÓN POR EL CONSUL DE COLOMBIA O POR APOSTILLA



TRADUCCION OFICIAL No. 041236  
JUAN PABLO PINEDA AGUILERA  
TRADUCTOR E INTERPRETE OFICIAL  
Año 718 DE MAYO 2003  
D.L. MIN. INTERIOR Y DE JUSTICIA

## NOTARIAL CERTIFICATE

(When the applicant is a CORPORATION)

(Powers of attorney granted in: El Salvador, Mexico, U.S.A. and Venezuela)

This 16TH day of December, 2003  
the undersigned Notary CERTIFIES that:

1. DOUG JONES  
(name of the person who signs the power of attorney)  
of legal age and domiciled in PORT MACQUARIE, AUSTRALIA signed in his hand on the foregoing document.
2. The grantor is to him personally known and that he/she has legal capacity to execute the document.
3. The grantor has executed the foregoing document in his capacity of MANAGING- DIRECTOR PRESIDENT of the juridical person WINE WAREHOUSE
4. The mentioned juridical person with place of business in ARTARMAN, NSW, AUSTRALIA is duly organized, has actual legal existence and that the purposes for which the power of attorney is granted are within the scope of its corporate purposes.
5. The grantor has in fact the referred quality and that his/her representation is legal and that he/she is empowered to grant this power of attorney.
6. I have based the above certifications 3, 4 and 5, on the authentic documents which for such purposes were exhibited to me.

Notary Public

NOTA: Then the Colombian Consul must legalize the signature of the Notary Public.

## NOTARIAL CERTIFICATE (When the applicant is an INDIVIDUALS)

On this \_\_\_\_\_ day of \_\_\_\_\_  
the undersigned Notary CERTIFIES that:

1. DOUG JONES  
(name of the person who signs the Power of Attorney)  
of legal age and domiciled at PORT MACQUARIE, AUSTRALIA signed in his presence the foregoing document, the grantor is to him personally known and that he/she has legal capacity to execute the document.

Notary Public

NOTA: Then the Colombian Consul must legalize the signature of the Notary Public.

For all other countries the Colombian Consul or before whom it is granted must issue a certification stating 1) the legal existence of the corporation, 2) that the corporate purposes are actually being accomplished, 3) that the person or persons who grant this Power of Attorney are empowered to do it. The Consul will certify also that the documents evidencing these circumstances were exhibited to him.

## LEGALIZATION BY THE COLOMBIAN CONSUL OR BY APOSTILLE

TERRY CURLEY  
SOLICITOR AND NOTARY PUBLIC  
8/114 WILLIAM ST  
PORT MACQUARIE N.S.W. 2444

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



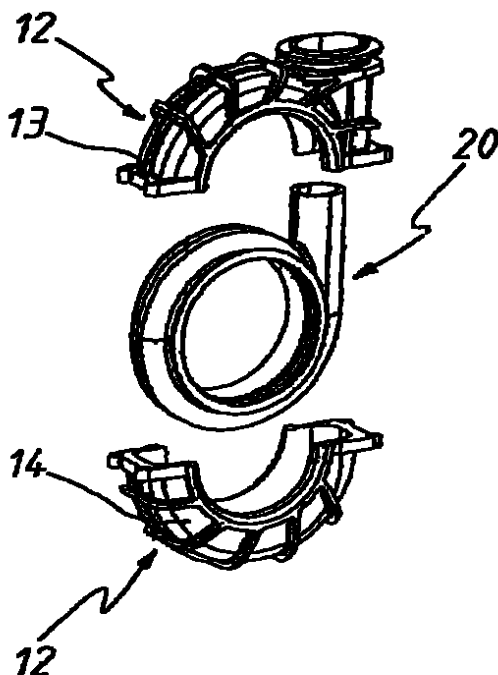
(43) International Publication Date  
17 March 2005 (17.03.2005)

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- (74) Agents: SKEETON, Anthony, Richard et al.; Davies Collison Cave, Level 10, 10 Barrack Street, Sydney, New South Wales 2000 (AU).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, GU, HT, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PUMP HOUSING ASSEMBLY WITH LINER



(57) Abstract: A pump housing assembly which includes a pump casing (12) and a liner (20), the pump casing (12) including at least two parts (13, 14) which are adapted to be connected together in an assembled position wherein the pump casing (12) includes opposed front and rear sides, the two parts (13, 14) of the pump casing (12) when in the assembled position have a common junction region which is disposed within one or more planes which pass through the front and rear sides of the pump casing (12) when in the assembled position.

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## PUMP HOUSING ASSEMBLY WITH LINER

5 This invention relates generally to pumps such as for example end suction centrifugal pumps that have an outer casing and an internal liner. The invention is particularly suitable for slurry pumps that have an outer casing for withstanding the pressure and pipe loadings and an internal liner that is wear resistant and which in turn is supported by the outer casing.

10

Centrifugal slurry pumps typically utilise a cast outer casing made in Cast Iron or Ductile Iron with an internal liner moulded from a wear resisting elastomer compound. The casing and the liners are traditionally manufactured in two parts or halves held together with bolts at the periphery of the casing. When assembled the two parts form a  
15 pump housing having a front side with an inlet therein and a rear side with a pumping chamber therein in which is disposed an impeller mounted for rotation on an impeller shaft. The impeller shaft enters the pumping chamber from the rear side and an outlet is provided at the peripheral side edge. The casing and liner halves are convex on the outside and concave shape on the inside. The liners normally have a metal skeleton moulded  
20 inside the elastomer which helps maintain its shape but also provides attachment points for bolts or studs to fix the liner into the casing halves. The two parts join along a plane which is generally perpendicular to the axis of rotation of the pump impeller.

During assembly, the two liner halves must be squeezed together at their periphery  
25 by the casing and casing bolts to effect a pressure tight seal. The resulting joint line is a vulnerable wear area in the pump, especially as the joint line is adjacent to the impeller discharge. Any misalignment of the liner halves along this joint line will produce steps or gaps in the joint line that will lead to preferential wear. Once wear starts at a local spot, the continued disturbed flow pattern at the step or gap will lead to an accelerated wear  
30 point and in the worst case localised wear will cause the liner to be worn through thereby exposing the pressure containing casing to wear.

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It is an object of the present invention to provide a pump housing assembly which alleviates one or more of the aforementioned disadvantages.

According to one aspect of the present invention there is provided a pump housing  
5 assembly which includes a pump casing and a liner, the pump casing including at least two  
parts which are adapted to be connected together in an assembled position wherein the  
pump casing includes opposed front and rear sides, the two parts of the pump casing when  
in the assembled position have a common junction region which is disposed within one or  
more planes which pass through the front and rear sides of the pump casing when in the  
10 assembled position.

When in the assembled position, the liner is disposed within the pump casing and  
forms a pumping chamber for an impeller rotatable about a rotation axis which extends  
between the front and rear sides of the pump casing.

15

In one form of the invention the two parts of the pump casing have the common  
junction region disposed in a plane which is aligned with the axis of rotation of the  
impeller.

Desirably, the liner is formed of one piece from an elastomer such as for example,  
20 rubber, synthetic rubber or the like. The liner may include annular flanges on each side  
thereof which are adapted to be clamped between the two casing parts in the assembled  
position. The flanges may include sealing portions thereon. The sealing portions may be  
adapted to be received within a cavity formed between the pump casing and a pump end  
25 plate assembly. The sealing portion may be generally wedge shaped formed integral with  
the liner and responsive to pressures produced before and during operation of the pump.  
This may form a separate aspect of the invention.

Preferred embodiments of the invention will herein after be described with  
30 reference to the accompanying drawings, and in those drawings:

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Figure 1 is an exploded view of a pump according to the present invention;

Figure 2 is an exploded view of a pump housing assembly according to the present invention;

5

Figures 3 and 4 are schematic illustrations of the pump casing of the assembly shown in Figures 1 and 2;

10

Figures 5 to 7 are schematic illustrations of a liner shown in Figures 1 and 2; and

Figure 8 is a detailed illustration of the seal assembly.

Referring to Figure 1 of the drawings there is shown an exploded view of a pump generally indicated at 10 which includes a pump casing 12 having two parts 13 and 14 which can be assembled together, an elastomeric liner 20, a drive shaft assembly 22, an impeller 24, front and back side liners 25 and 26 (the front side liner is often referred to as the "throat bush") and an end plate 28.

In an assembled position the impeller 24 is disposed within a pump chamber 29 and operatively connected to drive shaft assembly 22 for rotation and about rotation axis X-X. Slurry is drawn into the pump chamber 29 via inlet 27 and discharged through outlet 23 as is conventional.

The pump casing 12 is best seen in Figures 3 and 4 and includes two parts 13 and 14 which can be fitted together. Flanges 15 have apertures 16 therein for receiving mounting bolts to hold the two parts together. In the assembled position the casing includes a front side 17 having an inlet 21 therein and a rear side 18 to which the shaft assembly is operatively connected. The two parts 13 and 14 are fitted together in a plane which contains the axis of rotation X-X. Thus, the plane extends through the front and rear sides 17 and 18 of the casing.

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The liner 20 is a one piece structure formed from a suitable elastomeric material. As best seen in Figures 5 to 7, the liner 20 includes annular flanges 31 and 32 which are adapted to be clamped between the flanges 15 on the pump casing parts 13 and 14. The flanges 31 and 32 have seal portions 33 and 34 thereon which include flexible lips 35 and 36. The flanges 31 and 32 and associated seal portions 33 and 34 have strengthening ribs 38 on the surface thereof. The section shown in Figure 7 shows the configuration of the flange and seal portions 31 and 33 whereas the section on the other side is taken through one of the ribs 38.

Referring to Figure 8 the seal assembly is shown in an installed position. The seal portion 34 is disposed within a cavity 42 formed between the casing 14 and the end plate assembly 19. The seal portion 34 fits within the cavity 42. The diameter of the lip 36 is less than the outer diameter of side liner 26 so that the lip is compressed during assembly of the side liner 26 into the main liner 20; that is a seal is effected and lip 36 ensures that the pump holds the static pressure when first filled. The cavity assists controlling the shape and pressure applied to the seal portion. During operation the internal area is pressurised the pressure acting on the seal to increase its sealing capacity.

Because the elastomer liner is produced in one-piece, it avoids the vertical joint line of conventional pumps and the weakness that it introduces due to wear at the joint line. Further the elastomer liner may not require an internal metal skeleton and consequently, the liner can be manufactured to a more uniform thickness or known high wear regions can be made thicker without affecting the liners manufacturability or compromising its wear life. Further, without internal reinforcement, the elastomer liner will more easily conform to the internal shape of the pump casing due to the internal pump pressure generated while the pump is running. Any looseness or gaps between the metal casing and the liner are thereby minimised leading to a more robust liner as looseness and gaps will potentially lead to vibration and hysteresis heating of the elastomer and therefore reduced life.

As described earlier, to enable the liner to be held by the outer metal casing, a thickened region is provide around the liner horizontal centreline and an extension is

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provided either side of the liner to allow clamping by the outer metal casing. The extension either side of the rubber liner further includes an integral seal which is activated initially by the clamping provided by the outer casing and then by the internal pressure of the pumped fluid. With this arrangement, no internal metal skeleton or reinforcing may be required which also more easily facilitates the liner sealing when the liner is moulded in different elastomer compounds.

The liner being one piece without a vertical split line simplifies the casing design as well as obviating the need for casing bolts. The liner projection and seal on either side of the liner is made a large enough diameter to allow the impeller to be installed through the side of the liner and as well to suit the sideline.

The outer casing is thereby required to be in two pieces to enable the fitment of the one-piece liner. It will be appreciated that the split line for the casing could be selected from a number of different positions. The requirements for casing bolts therefore reduce to a small number of bolts on the pump centreline. The casing bolts have the dual function of holding the casing halves together as well as squeezing the raised elastomer land to hold the liner in the casing. The sides of the outer metal casing also assist in compressing and holding the elastomer projections and seals on both sides of the elastomer liner and prevent it from both being pushed out under pressure or being sucked in under vacuum. The metal casing can be produced either as two separate pieces or cast as one and then later split in the manufacturing cycle.

The use of a one-piece liner and two piece casing assists to lower maintenance costs. In most cases, the pump discharge pipework can be left attached to the pump. By removing the pumps suction pipework, front liner and impeller, it is possible to gain access to the pump internals for inspection.

The casing design may or may not have ribs for high-pressure applications. The casing bolts are designed to take the full design pressure without passing their elastic limit.

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The reference to any prior art in this specification is not, and should not be taken as, an acknowledgment or any form of suggestion that that prior art forms part of the common general knowledge in Australia.

5        Throughout this specification and the claims which follow, unless the context requires otherwise, the word "comprise", and variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

10

Finally, it is to be understood that the inventive concept in any of its aspects can be incorporated in many different constructions so that the generality of the preceding description is not to be superseded by the particularity of the attached drawings. Various alterations, modifications and/or additions may be incorporated into the various  
15 constructions and arrangements of parts without departing from the spirit or ambit of the invention.

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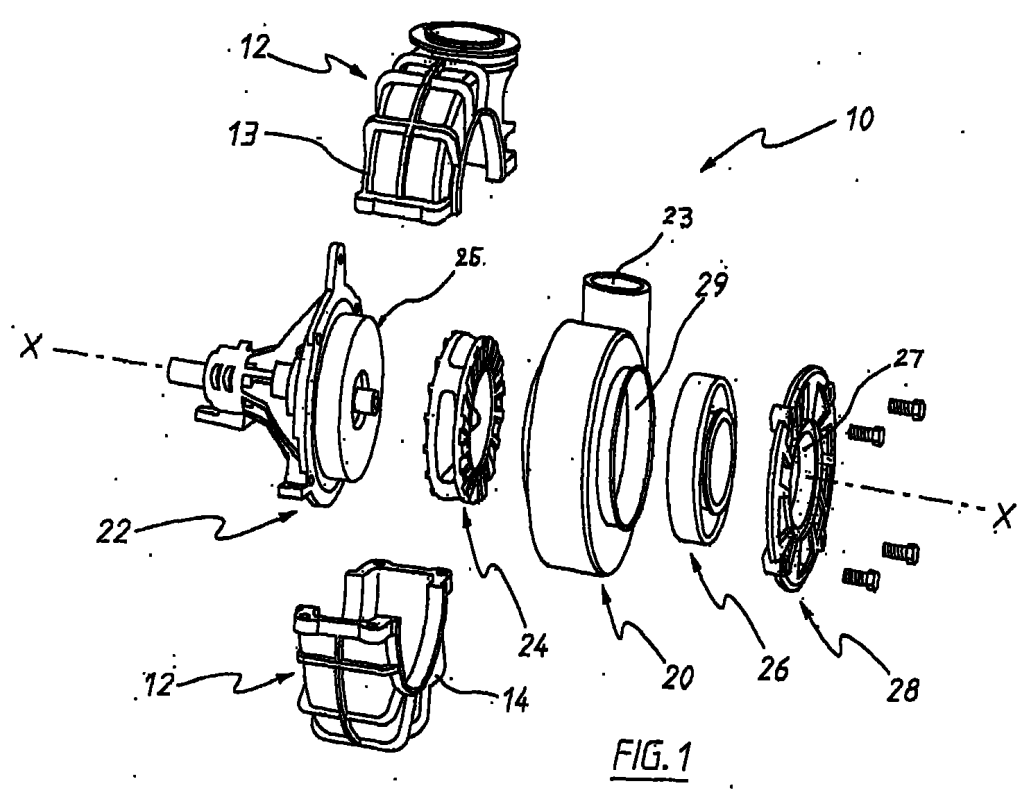
- 7 -

**CLAIMS**

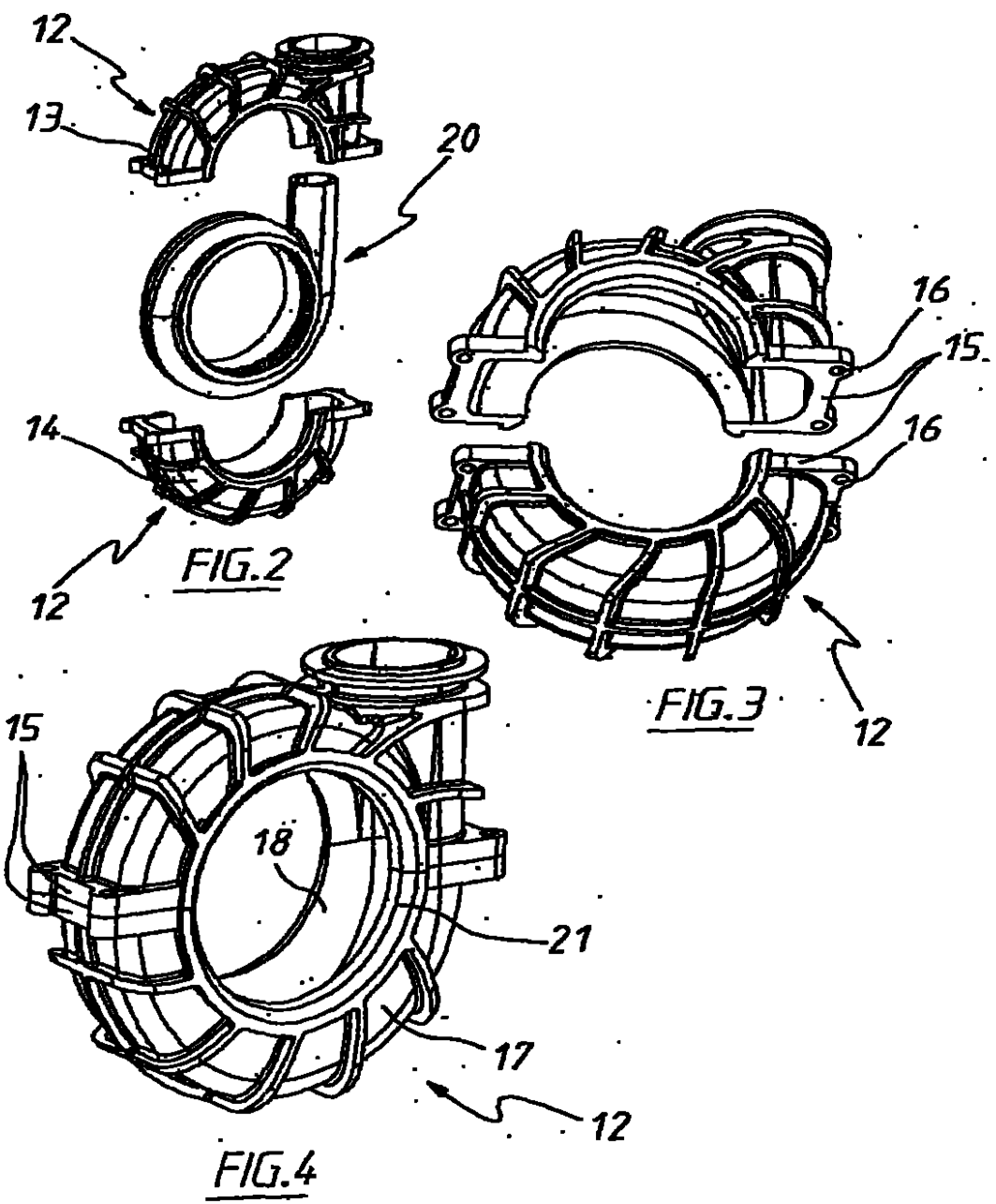
1. A pump housing assembly which includes a pump casing and a liner, the pump casing including at least two parts which are adapted to be connected together in an assembled position wherein the pump casing includes opposed front and rear sides, the two parts of the pump casing when in the assembled position have a common junction region which is disposed within one or more planes which pass through the front and rear sides of the pump casing when in the assembled position.
2. A pump housing assembly according to claim 1 wherein, when in the assembled position, the liner is disposed within the pump casing and forms a pump chamber for an impeller rotatable about a rotation axis which extends between the front and rear sides of the pump casing.
3. A pump housing assembly according to claim 1 or claim 2 wherein the two parts of the pump casing have the common junction region disposed in a plane which is aligned with the axis of rotation of the impeller.
4. A pump housing assembly according to any preceding claim wherein, the liner is formed of one piece from an elastomer and includes annular flanges on each side thereof which are adapted to be clamped between the two casing parts in the assembled position.
5. A pump housing assembly according to claim 4 wherein the flanges may include sealing portions thereon, the sealing portions being adapted to be received within a cavity formed between the pump casing and a pump end plate assembly.
6. A pump housing assembly according to claim 5 wherein the sealing portion are generally wedge shaped formed integral with the liner and responsive to pressures produced before and during operation of the pump.

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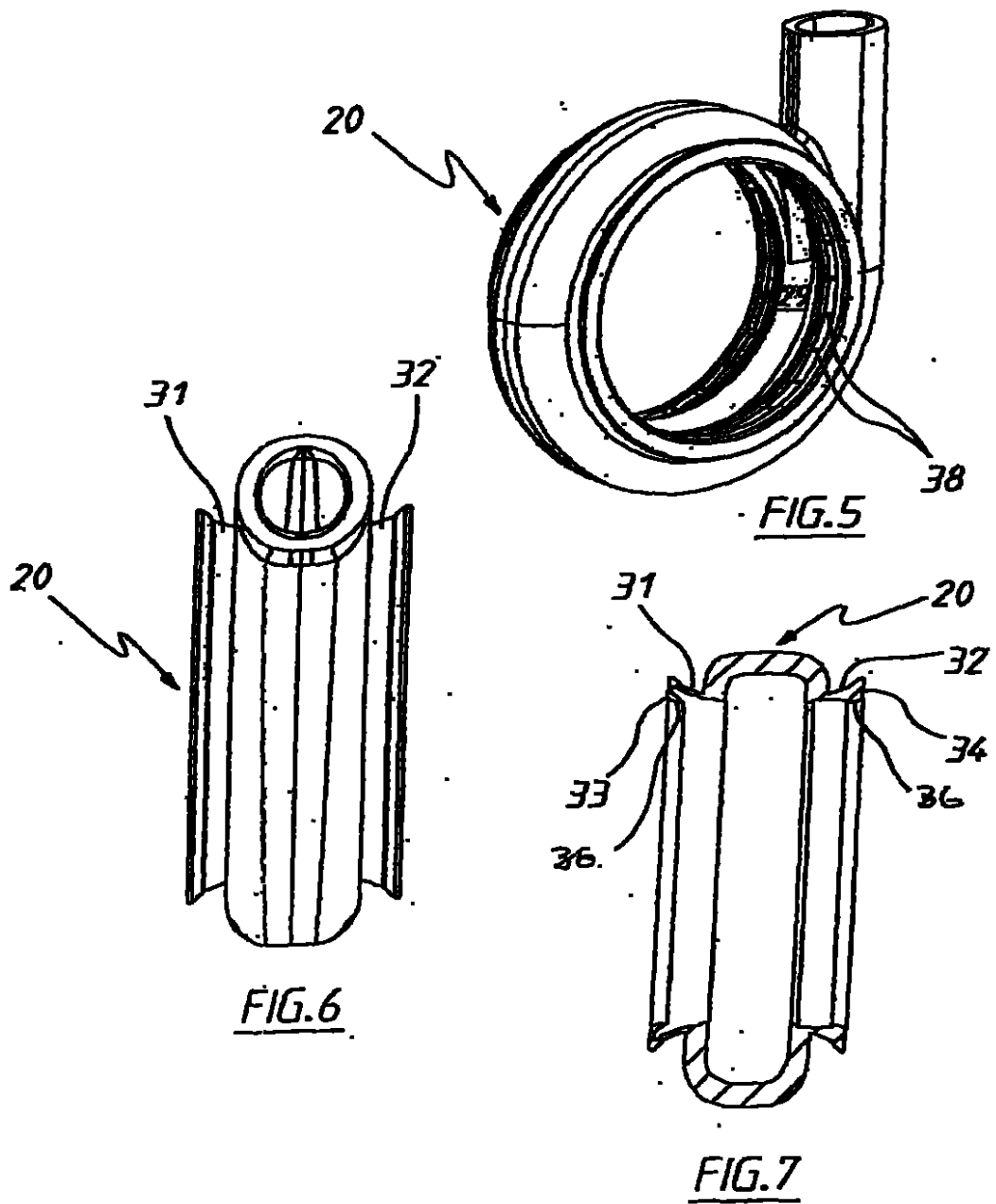
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22



13



3

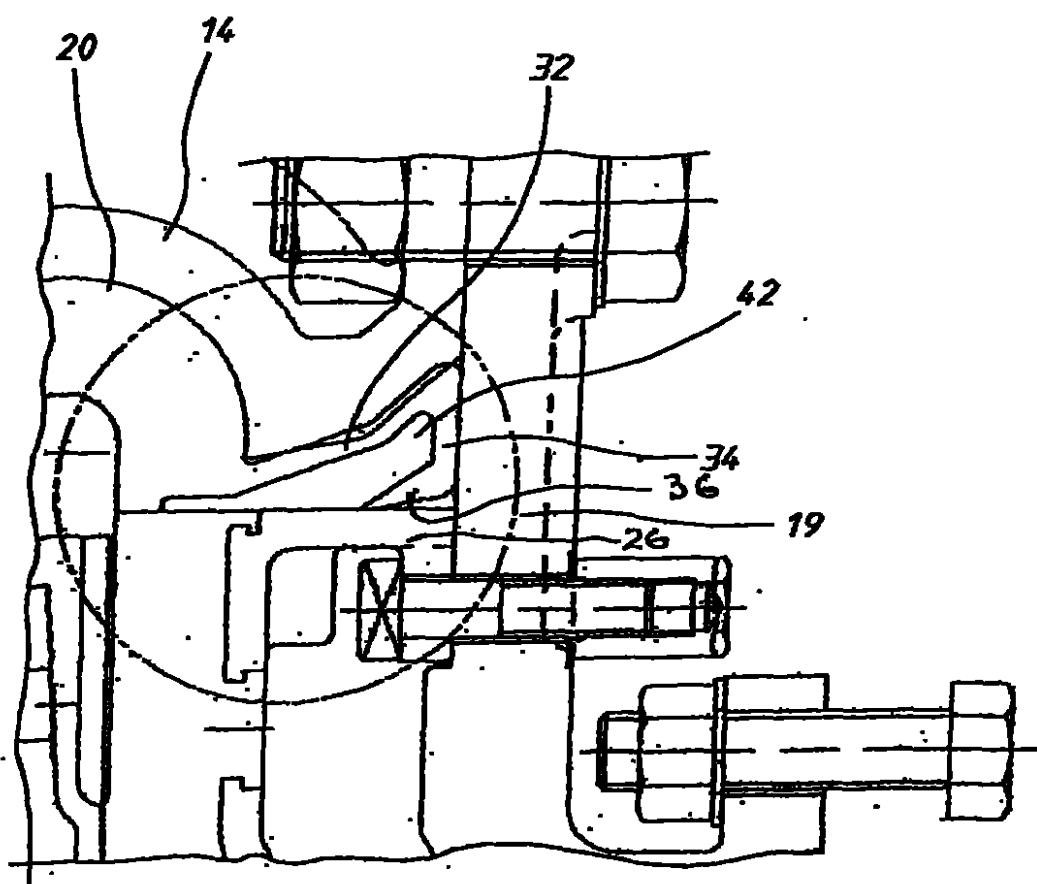


FIG. 8

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001153

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: F04D 29/42, 29/44, 7/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See below under "Electronic databases searched"

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPTO : ccl/415/197 and tti/pump\$

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI : F04D 7/04, 7/00, 29/00, 29/40, 29/42, 29/44 with keywords : case, liner, axis and similar terms

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| X         | US 6582191B2 (ADDIE et al.) 24 June 2003<br>The whole document                     | 1-6                   |
| Y         | The whole document                                                                 | 1-6                   |
| X         | US 5127800A (HYLL et al.) 7 July 1992<br>The whole document                        | 1-3                   |
| X         | US 4917571A (HYLL et al.) 17 April 1990<br>The whole document                      | 1-3                   |
| X         | US 5513954A (BOURGBOIS) 7 May 1996<br>The whole document                           | 1-3                   |

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Z" document member of the same patent family

|                                                                                                                                                                                      |                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Date of the actual completion of the international search<br>1 October 2004                                                                                                          | Date of mailing of the international search report<br>8 OCT 2004     |
| Name and mailing address of the ISA/AU<br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: pct@ipaustalia.gov.au<br>Facsimile No. (02) 6285 3929 | Authorized officer<br>ASANKA PERERA<br>Telephone No : (02) 6283 2373 |

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU2004/001153

| C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |                                                                                                              |                       |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------|
| Category*                                             | Citation of document, with indication, where appropriate, of the relevant passages                           | Relevant to claim No. |
| Y                                                     | KARASSIK et al. (Editors), "Pump Handbook", McGraw-Hill Book Company, 1976 pp. 2-37, 2-38, Figures 12 and 13 | 1-6                   |





## **MONTAJE DE CARCASA PARA BOMBA**

El presente invento está generalmente relacionado con bombas, como por ejemplo, bombas centrífugas de succión final con una cubierta exterior y un revestimiento interior. El invento es especialmente apropiado para bombas de relave con una cubierta exterior para resistir la presión y las cargas de tuberías y un revestimiento interior que es resistente al desgaste y que a la vez esta apoyada por la cubierta exterior.

Las bombas centrífugas de relaves por lo general utilizan una cubierta exterior moldeada en Fierro Fundido o Fierro Flexible y tienen un revestimiento interior moldeado de un compuesto elastomérico resistente al desgaste. Las cubiertas y revestimientos están tradicionalmente fabricados en dos partes o mitades que se mantienen unidas con pernos en la periferia de la cubierta. Al ser montadas las dos partes forman una carcasa de bomba que tiene un lado frontal con una entrada y un lado posterior con una cámara de bombeo en ella en la cual se dispone un propulsor montado para rotar en un eje propulsor. El eje propulsor entra en la cámara de bombeo desde el lado posterior proporcionando una salida en el borde del extremo periférico. Las mitades de la cubierta y revestimiento son convexas en su exterior y cóncavas en el interior. Los revestimientos generalmente tienen un esqueleto de metal moldeado dentro del elastómero que ayuda a mantener su forma pero a la vez proporciona puntos de sujeción para que los pernos o tornillos fijen el revestimiento hacia las mitades de la cubierta. Las dos partes se juntan a lo largo de un plano que generalmente es perpendicular a los ejes de rotación del propulsor de la bomba.

Durante el montaje, las dos mitades del revestimiento deben ser juntamente comprimidas en su periferia por la cubierta y los pernos de la cubierta para producir un sello apretado por presión. La línea de unión resultante es un área vulnerable al desgaste en la bomba, especialmente porque la línea de unión está contigua a la descarga del propulsor. Cualquier desalineamiento de las mitades del revestimiento a lo largo de esta línea de unión produciría escalinatas o

huecos en la línea de unión que llevaría a un desgaste mayor. Una vez que el desgaste comienza en un punto local, el flujo continuo desordenado en las escalinatas o huecos llevará a un desgaste acelerado en un punto y en el peor de los casos el desgaste localizado causaría desgaste a través del revestimiento, exponiendo por lo tanto al desgaste la cubierta que contiene la presión.

Uno de los objetivos del presente invento es proporcionar un montaje de carcasa para bomba que alivie una o más de las desventajas antes mencionadas.

De acuerdo a un aspecto del presente invento, se proporciona un montaje de carcasa para bomba que incluye una cubierta de bomba y un revestimiento, la cubierta de bomba incluyendo por lo menos dos partes que están adaptadas para conectarse juntas en una posición acomodada donde la cubierta de la bomba incluye lados opuestos delanteros y posteriores, las dos partes de la cubierta de la bomba al estar en la posición ajustada tienen una región de empalme común que esta colocada dentro de uno o mas planos que al estar en la posición ajustada, pasan a través de los lados frontales y posteriores de la carcasa.

En la posición ensamblada, el revestimiento está colocado dentro de la cubierta de la bomba formando una cámara de bombeo para un propulsor rotante alrededor de un eje girador que se extiende entre la parte delantera y trasera de la cubierta de la bomba.

En una forma del invento, las dos partes de la cubierta de la bomba tienen la parte de unión común colocada en un plano que esta alineado con el eje de rotación del propulsor.

De preferencia, el revestimiento está formado de una pieza de elastómero como por ejemplo, caucho, caucho sintético o algo similar. El revestimiento puede incluir pestañas anulares a cada uno de sus lados que se adaptan para ser sujetas entre las dos partes de la cubierta en la posición ensamblada. Las pestañas pueden incluir partes de sello. Las partes de sello pueden adaptarse para ser recibidas dentro de una cavidad que se forma entre la cubierta de la bomba y una chapa de montaje al extremo de la bomba. La parte de sello puede estar generalmente en forma de cuña que se integra con el revestimiento y que es

sensible a las presiones producidas antes y durante la operación de la bomba. Esto puede constituir un aspecto distinto del invento.

Las ensambladuras preferidas del invento van a ser descritas posteriormente haciendo referencia a los dibujos acompañados, y en dichos dibujos:

La Figura 1 es una vista esquemática de una bomba de acuerdo con el presente invento;

La Figura 2 es una vista esquemática del montaje de una carcasa para bomba de acuerdo con el presente invento;

Las Figuras 3 y 4 son ilustraciones esquemáticas de la carcasa de bomba del montaje que se muestra en las Figuras 1 y 2;

Las Figuras 5 al 7 son ilustraciones esquemáticas de un revestimiento que se muestran en las Figuras 1 y 2; y

La Figura 8 es una ilustración detallada del montaje de sellado.

Con referencia a la Figura 1 de los dibujos, se muestra una vista esquemática de una bomba que se muestra generalmente bajo el 10, que incluye una cubierta de bomba 12 que tiene dos partes 13 y 14 las cuales pueden ser montadas juntas, un revestimiento elastomérico 20, el montaje de un eje impulsor 22, un propulsor 24, revestimientos laterales delanteros y posteriores 25 y 26 (el revestimiento delantero frecuentemente se le llama como "el matorral garganta") y una chapa al extremo 28.

En una posición ensamblada el propulsor 24 está colocado dentro de una cámara de bomba 29 y operativamente conectado al montaje del eje impulsor 22 para su rotación y rotación alrededor del eje X-X. El relave es dirigido hacia la cámara de la bomba 29 mediante una entrada 27 y descargada a través de una salida 23 como es lo común.

La cubierta de bomba 12 se aprecia mejor en las Figuras 3 y 4 e incluye dos partes 13 y 14 que pueden ser acopladas juntas. Las pestañas 15 tienen aberturas 16 para recibir pernos de montaje con el fin de sujetar las dos partes acopladas. En la posición ensamblada la cubierta incluye un lado frontal 17 con una entrada

21 y un lado posterior 18 al cual el montaje del eje se conecta operativamente. Las dos partes 13 y 14 son acomodadas juntas en un plano que contiene el eje giratorio X-X. Así, el plano se extiende a través de los lados frontales y posteriores 17 y 18 de la cubierta.

El revestimiento 20 es una estructura de una pieza formada de un material elastomérico apropiado. Como se aprecia mejor en las Figuras del 5 al 7, el revestimiento 20 incluye pestañas anulares 31 y 32 que se adaptan para ser apemadas entre las pestañas 15 en las partes de la cubierta de la bomba 13 y 14. Las pestañas 31 y 32 tienen porciones de sello 33 y 34 que incluyen labios flexibles 35 y 36. Las pestañas 31 y 32 y porciones de sello asociadas 33 y 34 tienen costillas reforzadoras 38 en su superficie. La sección que se muestra en la Figura 7 muestra la configuración de la pestaña y las porciones de sello 31 y 33 mientras que la sección del otro lado se lleva a través de una de las costillas 38.

En relación a la Figura 8 el montaje de sello se muestra en una posición establecida. La porción de sello 34 está colocada dentro de una cavidad 42 que se forma entre la cubierta 14 y el montaje de la chapa final 19. La porción de sello 34 encaja dentro de la cavidad 42. El diámetro del labio 36 es menor que el diámetro exterior del revestimiento lateral 26 de manera que el labio se comprime durante el montaje del revestimiento lateral 26 dentro del revestimiento principal 20; esto es, se efectúa un sello y el labio 36 asegura que la bomba mantenga la presión estática de cuando se llenó por primera vez. La cavidad ayuda a controlar la forma y la presión que se aplica a la porción de sello. Durante la operación, el área interna es presurizada, actuando la presión en el sello para aumentar su capacidad selladora.

Debido a que el revestimiento elastomérico se produce de una sola pieza, este evita la línea de juntura vertical de las bombas convencionales y la debilidad que se produce debido al desgaste de la línea de juntura. Luego, el revestimiento elastomérico puede no requerir un esqueleto metálico interno y por lo tanto, el revestimiento puede ser fabricado de un grosor más uniforme o las zonas conocidas que tienen mayor desgaste pueden ser más gruesas sin afectar la

fabricación de los revestimientos o comprometer el periodo de desgaste. Adicionalmente, sin reforzamiento interno, el revestimiento elastomérico se va a adaptar mas fácilmente a la forma interna de la cubierta de la bomba debido a la presión interna de la bomba que se genera mientras está en funcionamiento. Cualquier aflojamiento o huecos entre la cubierta de metal y el revestimiento son por lo tanto minimizados conduciéndolo a un revestimiento mas resistente, ya que el aflojamiento y los huecos van a llevar eventualmente a vibraciones y un calentamiento por histéresis del elastómero y por lo tanto un período de vida más corto.

Como se ha descrito anteriormente, para permitir que el revestimiento se sujete por la cubierta de metal exterior, ésta proporciona una región mas gruesa alrededor de la línea central horizontal del revestimiento y se proporciona una extensión a cada lado del revestimiento para permitir que la parte exterior de la cubierta de metal se sujete firmemente. La extensión a cada lado del revestimiento de caucho además incluye un sello integral que es inicialmente activado por el engrape de la cubierta externa y después por la presión interna del flujo bombeado. Con este arreglo puede que no se necesite el esqueleto metálico interno o reforzamiento que también facilita el sello del revestimiento cuando éste está moldeado en diferentes compuestos elastoméricos.

El revestimiento, al ser de una pieza sin una línea divisoria vertical, simplifica el diseño de la cubierta como también previene la necesidad de pernos para la cubierta. La proyección del revestimiento y sello a cada lado de éste se ha hecho con un diámetro suficientemente grande para permitir la instalación del propulsor a través del costado del revestimiento y a la vez adaptarse al revestimiento lateral.

Se requiere por lo tanto que la cubierta exterior sea de dos piezas para permitir el encaje del revestimiento de una pieza. Sería preferible que la línea divisoria para la cubierta pueda ser seleccionada de varias diferentes posiciones. Así la necesidad de pernos de cubierta se reduce a un número mínimo de pernos en la línea central de la bomba. Los pernos de cubierta tienen la función doble de

sujetar las mitades de cubiertas unidas al mismo tiempo que apretar el elastómero elevado para posicionarlo y sujetar el revestimiento en la cubierta. Los costados de la cubierta de metal exterior también ayudan a comprimir y sujetar las proyecciones elastoméricas y sellos a ambos lados del revestimiento elastomérico y así prevenir que sea empujado hacia fuera bajo presión o ser chupado por aspiración. La cubierta de metal puede ser manufacturada tanto en dos piezas diferentes o moldeada como una sola para después ser dividida durante el ciclo de fabricación.

El uso del revestimiento de una pieza y el de la cubierta de dos piezas ayuda a bajar los gastos de mantención. En la mayoría de los casos, la descarga de las tuberías de la bomba pueden quedar sujetas a la bomba. Al retirar las tuberías de succión de las bombas, el revestimiento frontal y el propulsor, se obtiene acceso a los interiores de la bomba para su inspección.

El diseño de la cubierta podría tener o no costillas para aplicaciones de alta presión. Los pernos de la cubierta están diseñados para admitir la presión del diseño completo de presión sin sobrepasar sus límites de elasticidad.

La referencia en esta especificación a cualquier arte previo no es, ni debiera ser tomada como un reconocimiento o alguna otra forma de sugerencia de que ese arte previo forma parte del conocimiento general en Australia.

En la presente especificación y reivindicaciones que siguen, salvo que en el contexto se requiera de otra manera, la palabra "comprender", y sus variaciones como "comprende" o "comprendiendo", se entenderán que implican inclusión de una determinada entidad completa, paso o grupo de entidades completas o pasos, pero no la exclusión de cualquier otra entidad completa, paso o grupo de entidades completas o pasos.

Finalmente, se debe tener en consideración que el concepto inventivo en cualquiera de sus aspectos puede ser incorporado en muchas construcciones diferentes, por tanto la generalidad de la descripción anterior no debe ser substituida por la particularidad de los dibujos adjuntos. Se podrán incorporar una variedad de alteraciones, modificaciones y /o agregados dentro de las varias

construcciones y adaptaciones de partes sin alejarse del espíritu o ámbito del invento.

## REIVINDICACIONES

1. Un montaje de carcasa para bomba que incluye una cubierta de bomba y un revestimiento, la cubierta de bomba incluyendo por lo menos dos partes que se adaptan para conectarse unidas en una posición de montaje donde la cubierta de la bomba incluye lados opuestos delanteros y posteriores, las dos partes de la cubierta de la bomba al estar en posición ensamblada tienen una parte de empalme en común que esta colocada dentro de uno o mas planos que pasan a través de los costados delanteros y posteriores de la cubierta de la bomba al estar en posición ensamblada.
2. Un montaje de carcasa para bomba de acuerdo a la reivindicación 1 donde, en la posición ensamblada, el revestimiento esta colocado dentro de la cubierta de la bomba formando una cámara de bomba para un propulsor que gira alrededor de un eje rotatorio que se extiende entre los lados frontales y posteriores de la cubierta de la bomba.
3. Un montaje de carcasa para bomba de acuerdo a la reivindicación 1 o 2 donde las dos partes de la cubierta de la bomba tienen la parte de empalme en común colocada en un plano alineado con el eje de rotación del propulsor.
4. Un montaje de carcasa para bomba de acuerdo a cualquiera de las reivindicaciones anteriores donde, el revestimiento se hace de una sola pieza de algún elastómero e incluye pestañas anulares a cada uno de sus lados que se adaptan para ser apernadas entre las dos partes de la cubierta en la posición ensamblada.
5. Un montaje de carcasa para bomba de acuerdo a la reivindicación 4 donde las pestañas pueden incluir porciones de sello, las porciones de sello adaptadas para ser recibidas dentro de una cavidad formada entre la cubierta de la bomba y

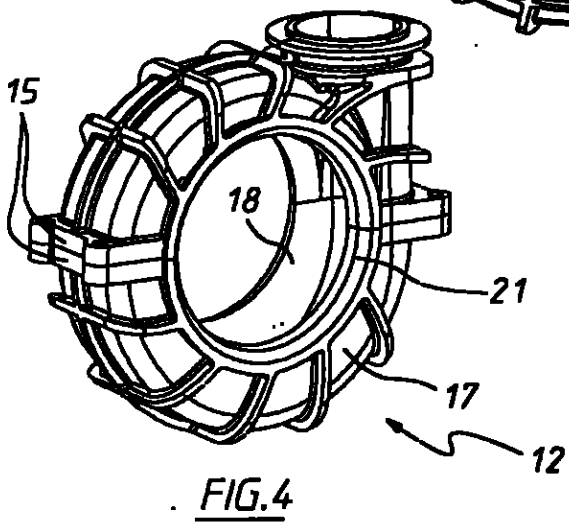
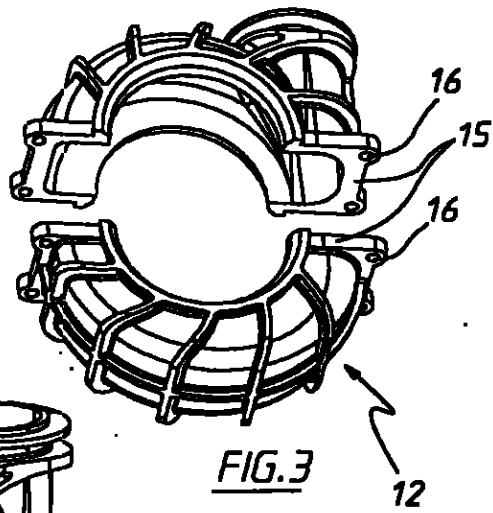
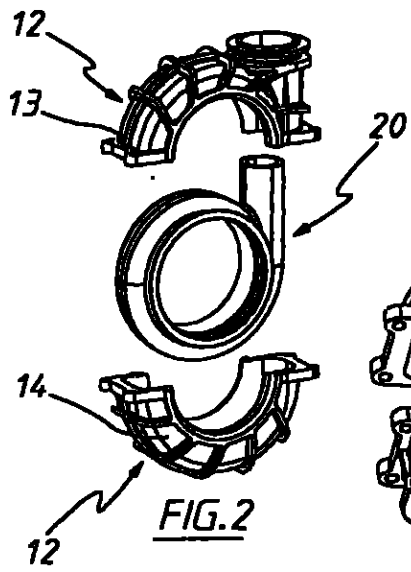
el montaje extremo de la chapa de la bomba.

6. Un montaje de carcasa para bomba de acuerdo a la reivindicación 5 donde la parte del sello es generalmente en forma de cuña que se integra con el revestimiento y que es sensible a las presiones producidas antes y durante la operación de la bomba.

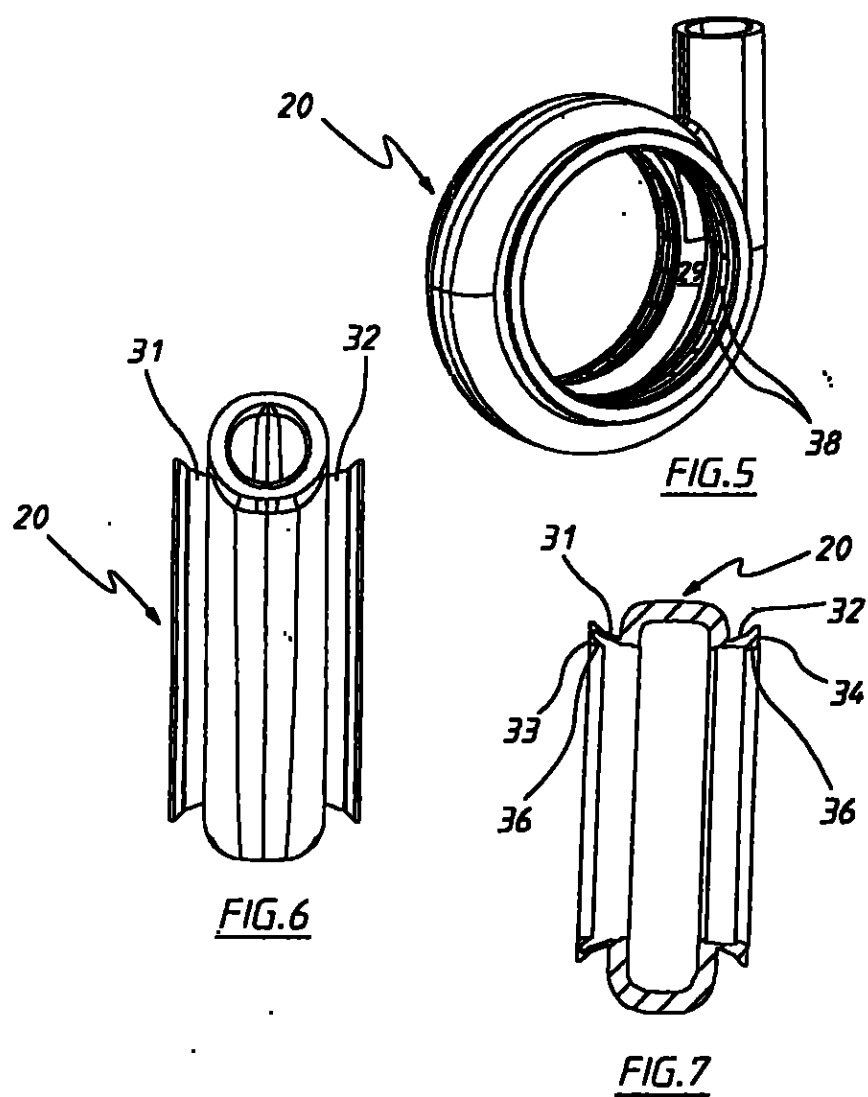
## RESUMEN

Un montaje de carcasa para bomba que incluye una cubierta de bomba y un revestimiento, la cubierta de bomba incluyendo por lo menos dos partes adaptadas para conectarse juntas en una posición ensamblada donde la cubierta de la bomba tiene lados opuestos delanteros y posteriores, las dos partes de la cubierta de la bomba al estar en posición ensamblada tienen una área de empalme en común que se coloca dentro de uno o mas planos que pasan a través de los lados frontales y posteriores de la cubierta de la bomba al estar en posición ensamblada.





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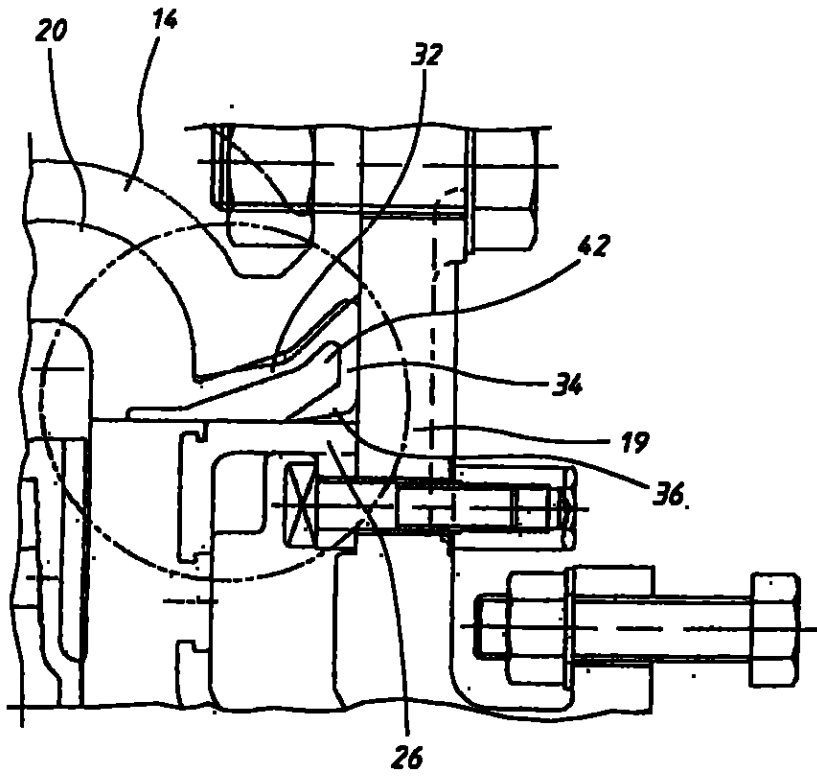


FIG. 8



# PATENT COOPERATION TREATY

From the:  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

|                                                                                   |                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>To:</b><br><br>Davies Collison Cave<br>GPO Box 3876<br>SYDNEY NSW 2001         | <div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 80%;"> <b>DCC (Sydney)</b><br/> <b>Mail Rcvd</b><br/><br/> <b>29 AUG 2005</b><br/><br/> <small>ARNO processed by</small> <i>lm</i><br/> <small>on</small> <i>30/08/05</i><br/> <small>Action date</small> <i>24/08/05</i> </div> | <h2 style="margin: 0;">PCT</h2> <p style="margin: 0;">NOTIFICATION OF TRANSMITTAL OF<br/>INTERNATIONAL PRELIMINARY<br/>REPORT ON PATENTABILITY<br/>(Chapter II of the Patent Cooperation Treaty)</p> <p style="text-align: right;">(PCT Rule 71.1)</p> |
| Applicant's or agent's file reference<br>12272711/ARS/skp                         |                                                                                                                                                                                                                                                                                                            | Date of mailing<br>(day/month/year) <b>29 AUG 2005</b>                                                                                                                                                                                                 |
| International application No.<br><b>PCT/AU2004/001153</b>                         |                                                                                                                                                                                                                                                                                                            | International filing date (day/month/year)<br><b>30 August 2004</b>                                                                                                                                                                                    |
| Priority date (day/month/year)<br><b>4 September 2003</b>                         |                                                                                                                                                                                                                                                                                                            | <h3 style="text-align: center; margin: 0;">IMPORTANT NOTIFICATION</h3>                                                                                                                                                                                 |
| Applicant<br><br><p style="text-align: center;"><b>WEIR WARMAN LTD et al.</b></p> |                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                        |

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translations to those Offices.
4. **REMINDER**  
  
 The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).  
  
 Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.  
  
 For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.  
  
 The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

|                                                                                                                                                                                                                                          |                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Name and mailing address of the IPEA/AU<br><br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: <a href="mailto:pct@ipaaustralia.gov.au">pct@ipaaustralia.gov.au</a><br>Facsimile No. (02) 6285 3929 | Authorized officer<br><br><p style="text-align: center;"><b>ASANKA PERERA</b></p> Telephone No. (02) 6283 2373 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|

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**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)

|                                                                                                                               |                                                              |                                                    |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|
| Applicant's or agent's file reference<br>12272711/ARS/skp                                                                     | <b>FOR FURTHER ACTION</b>                                    | See Form PCT/PEPA/416                              |
| International application No.<br>PCT/AU2004/001153                                                                            | International filing date (day/month/year)<br>30 August 2004 | Priority date (day/month/year)<br>4 September 2003 |
| International Patent Classification (IPC) or national classification and IPC<br>Int. Cl. <sup>7</sup> F04D 29/42, 29/44, 7/04 |                                                              |                                                    |
| Applicant<br>WEIR WARMAN LTD et al                                                                                            |                                                              |                                                    |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☒ (sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

|                                               |                                                                                                                                                                 |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report                                                                                                                                             |
| <input type="checkbox"/> Box No. II           | Priority                                                                                                                                                        |
| <input type="checkbox"/> Box No. III          | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability                                                                |
| <input type="checkbox"/> Box No. IV           | Lack of unity of invention                                                                                                                                      |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI           | Certain documents cited                                                                                                                                         |
| <input type="checkbox"/> Box No. VII          | Certain defects in the international application                                                                                                                |
| <input type="checkbox"/> Box No. VIII         | Certain observations on the international application                                                                                                           |

|                                                                                                                                                                                         |                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Date of submission of the demand<br>6 May 2005                                                                                                                                          | Date of completion of the report<br>23 August 2005                      |
| Name and mailing address of the IPEA/AU<br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: pct@ipaaustralia.gov.au<br>Facsimile No. (02) 6285 3929 | Authorized Officer<br><br>ASANKA PERERA<br>Telephone No. (02) 6283 2373 |

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1 (b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages 1-6 as originally filed/furnished

pages\* received by this Authority on with the letter of

pages\* received by this Authority on with the letter of

☒ the claims:

pages as originally filed/furnished

pages\* as amended (together with any statement) under Article 19

page\* 7 received by this Authority on 6 May 2005 with the letter of 6 May 2005

pages\* received by this Authority on with the letter of

☒ the drawings:

pages 1/4-4/4 as originally filed/furnished

pages\* received by this Authority on with the letter of

pages\* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages

☒ the claims page number 8

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Statement**

|                               |            |     |
|-------------------------------|------------|-----|
| Novelty (N)                   | Claims 1-6 | YES |
|                               | Claims     | NO  |
| Inventive step (IS)           | Claims 1-6 | YES |
|                               | Claims     | NO  |
| Industrial applicability (IA) | Claims 1-6 | YES |
|                               | Claims     | NO  |

**2. Citations and explanations (Rule 70.7)**

The closest prior art was found in the following documents:

US 6582191B2 (ADDIE et al) 24 June 2003

US 5127800A (HYLL et al.) 7 July 1992

US 4917571A (HYLL et al.) 17 April 1990

US 5513954A (BOURGEOIS) 7 May 1996

But none of these documents teach or fairly suggest a liner/pump housing assembly as defined by claims 1-6.

Therefore the subject matter of these claims is new and meets the requirements of Article 33(2) PCT with regard to novelty.

The claimed invention is not obvious in the light of any of the cited documents nor is it disclosed in any obvious combination of them. It is also considered that it would not be obvious to a person skilled in the art in the light of common general knowledge either by itself or in combination with any of these documents.

Therefore the subject matter of these claims is not obvious and meets the requirements of Article 33(3) PCT with regard to inventive step.

Up

- 7 -

**CLAIMS**

1. A pump housing assembly which includes a pump casing and a liner, the pump casing including at least two parts which are adapted to be connected together in an assembled position wherein the pump casing includes opposed front and rear sides, the two parts of the pump casing when in the assembled position have a common junction region which is disposed within one or more planes which pass through the front and rear sides of the pump casing when in the assembled position, the liner being of one piece and of an elastomer material and which includes annular flanges on each side thereof which are adapted to be clamped between the two casing parts in the assembled position.
2. A pump housing assembly according to claim 1 wherein, when in the assembled position, the liner is disposed within the pump casing and forms a pump chamber for an impeller rotatable about a rotation axis which extends between the front and rear sides of the pump casing.
3. A pump housing assembly according to claim 1 or claim 2 wherein the two parts of the pump casing have the common junction region disposed in a plane which is aligned with the axis of rotation of the impeller.
4. A pump housing assembly according to any preceding claim wherein the flanges may include sealing portions thereon, the sealing portions being adapted to be received within a cavity formed between the pump casing and a pump end plate assembly.
5. A pump housing assembly according to claim 4 wherein the sealing portion are generally wedge shaped formed integral with the liner and responsive to pressures produced during operation of the pump.
6. A pump housing assembly according to any preceding claim wherein the liner is free of any metal reinforcement.

### Reivindicaciones

1. Un ensamble de carcasa de bomba que incluye una cubierta de bomba y un protector, la cubierta de bomba incluye al menos dos partes que se adaptan para ser conectadas juntas en una posición ensamblada en donde la cubierta de bomba incluye lados frontal y trasero opuestos, cuando las dos partes de la cubierta de bomba en la posición ensamblada tienen una región de unión común que está dispuesta dentro de uno o más planos que pasan a través de los lados frontal y trasero de la cubierta de bomba cuando está en la posición ensamblada, el protector es de una pieza y de un material elastómero y que incluye rebordes anulares en cada lado de este que se adaptan para sujetar con abrazadera las dos partes en la posición ensamblada.
2. Un ensamble de carcasa de bomba de acuerdo con la reivindicación 1 en donde, cuando en la posición ensamblada, el protector está dispuesto dentro de la cubierta de bomba y forma una cámara de bomba para un propulsor girable alrededor de un eje de rotación que se extiende entre los lados frontal y trasero de la cubierta de bomba.

3. Un ensamble de carcasa de bomba de acuerdo con la reivindicación 1 o 2 en donde las dos partes de la cubierta de bomba tienen una región de unión común dispuesta en un plano que se alinea con el eje de rotación del propulsor.
4. Un ensamble de carcasa de bomba de acuerdo con cualquiera de las reivindicaciones precedentes en donde pueden incluir porciones de sello en esta, las porciones de sello se adaptan para ser recibidas dentro de una cavidad formada entre la cubierta de bomba y un ensamble de extremo de bomba.
5. Un ensamble de carcasa de bomba de acuerdo con la reivindicación 4 en donde la porción de sello tiene forma de cuña generalmente integrada con el protector y responde a presiones reducidas durante operación de la bomba.
6. Un ensamble de carcasa de bomba de acuerdo con cualquier reivindicación precedente en donde el protector está libre de cualquier material de refuerzo

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|                                                              |                                                                                                                                                                                                                           |                                                                               |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Applicant's or agent's file reference<br><b>12272711/ARS</b> | <div style="display: flex; justify-content: space-between;"> <div> <b>FOR FURTHER ACTION</b> </div> <div>           see Form PCT/ISA/220<br/>           as well as, where applicable, item 5 below.         </div> </div> |                                                                               |
| International application No.<br><b>PCT/AU2004/001153</b>    | International filing date ( <i>day/month/year</i> )<br><b>30 August 2004</b>                                                                                                                                              | (Earliest) Priority Date ( <i>day/month/year</i> )<br><b>5 September 2003</b> |
| Applicant<br><b>WEIR WARMAN LTD et al.</b>                   |                                                                                                                                                                                                                           |                                                                               |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of **5** sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

#### Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.
2. ☐ Certain claims were found unsearchable (See Box No. II).
3. ☐ Unity of invention is lacking (See Box No. III).
4. With regard to the title,
 

☐ the text is approved as submitted by the applicant.  
☒ the text has been established by this Authority to read as follows:

#### PUMP HOUSING ASSEMBLY WITH LINER

5. With regard to the abstract,
 

☐ the text is approved as submitted by the applicant.  
☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the drawings,
  - a. the figure of the drawings to be published with the abstract is Figure No. 2
 

☒ as suggested by the applicant.  
☐ as selected by this Authority, because the applicant failed to suggest a figure.  
☐ as selected by this Authority, because this figure better characterizes the invention.
  - b. ☐ none of the figures is to be published with the abstract.

**Box No. IV Text of the Abstract (Continuation of item 5 of the first sheet)**

A pump housing assembly which includes a pump casing (12) and a liner (20), the pump casing (12) including at least two parts (13, 14) which are adapted to be connected together in an assembled position wherein the pump casing (12) includes opposed front and rear sides, the two parts (13, 14) of the pump casing (12) when in the assembled position have a common junction region which is disposed within one or more planes which pass through the front and rear sides of the pump casing (12) when in the assembled position.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001153

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: F04D 29/42, 29/44, 7/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See below under "Electronic databases searched"

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPTO : ccl/415/197 and ttl/pump\$

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI : F04D 7/04, 7/00, 29/00, 29/40, 29/42, 29/44 with keywords : case, liner, axis and similar terms

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| X         | US 6582191B2 (ADDIE et al.) 24 June 2003<br>The whole document                     | 1-6                   |
| Y         | The whole document                                                                 | 1-6                   |
| X         | US 5127800A (HYLL et al.) 7 July 1992<br>The whole document                        | 1-3                   |
| X         | US 4917571A (HYLL et al.) 17 April 1990<br>The whole document                      | 1-3                   |
| X         | US 5513954A (BOURGEOIS) 7 May 1996<br>The whole document                           | 1-3                   |

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Z" document member of the same patent family

Date of the actual completion of the international search

1 October 2004

Date of mailing of the international search report

8 OCT 2004

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaustalia.gov.au  
Facsimile No. (02) 6285 3929

Authorized officer

ASANKA PERERA

Telephone No : (02) 6283 2373

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001153

C (Continuation).

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                           | Relevant to claim No. |
|-----------|--------------------------------------------------------------------------------------------------------------|-----------------------|
| Y         | KARASSIK et al. (Editors), "Pump Handbook", McGraw-Hill Book Company, 1976 pp. 2-37, 2-38, Figures 12 and 13 | 1-6                   |

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/AU2004/001153**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent Document Cited in<br>Search Report |         |    |         | Patent Family Member |            |    |         |
|-------------------------------------------|---------|----|---------|----------------------|------------|----|---------|
| US                                        | 6582191 | CA | 2398257 | US                   | 2003035721 |    |         |
| US                                        | 5127800 | EP | 0203218 | US                   | 4917571    | ZA | 8501063 |
| US                                        | 5513954 |    |         |                      |            |    |         |

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

**END OF ANNEX**

# PATENT COOPERATION TREATY

From the:  
INTERNATIONAL SEARCHING AUTHORITY

To:

Davies Collison Cave  
GPO Box 3876  
SYDNEY NSW 2001

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) **8 OCT 2004**

Applicant's or agent's file reference  
**12272711/ARS**

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
**PCT/AU2004/001153**

International filing date (day/month/year)  
**30 August 2004**

Priority date (day/month/year)  
**5 September 2003**

International Patent Classification (IPC) or both national classification and IPC  
**Int. CL<sup>7</sup> F04D 29/42, 29/44, 7/04**

Applicant

**WEIR WARMAN LTD et al**

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the IPEA/AU

AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: [pct@ipaustalia.gov.au](mailto:pct@ipaustalia.gov.au)  
Facsimile No. (02) 6285 3929

Authorized Officer

**ASANKA PERERA**  
Telephone No. (02) 6283 2373

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/AU2004/001153

Box No. I

Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/AU2004/001153

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

|                               |            |     |
|-------------------------------|------------|-----|
| Novelty (N)                   | Claims 1-6 | YES |
|                               | Claims     | NO  |
| Inventive step (IS)           | Claims     | YES |
|                               | Claims 1-6 | NO  |
| Industrial applicability (IA) | Claims 1-6 | YES |
|                               | Claims     | NO  |

2. Citations and explanations:

The following documents identified in the International Search Report have been considered for the purposes of this report:

D1: US 6582191B

D2: US 5127800A

D3: US 4917571A

D4: US 5513954A

D5: KARASSIK et al. (Editors). "Pump Handbook". McGraw-Hill Book Company. 1976

Inventive Step (IS)

Claims 1-6

D1 teaches a liner (42) which, as shown in Figure 3, is formed in one piece. The flanges are shown in Figure 4 in the form of the edge 42a. Given this disclosure, the choice of the outer volute casing construction to be in the form of axially-split type rather than the radially-split type taught is considered to be a non-inventive design variation in the hands of a person skilled in the art. It is also noted that axially-split (also known as horizontally-split) pump casings are long established in the art and hence considered to be a part of the common general knowledge as available to such a person.

Notwithstanding the above observation, an obvious combination of the above document with the cited extract pages from D5 would render the subject matter of the above claims lacking an inventive step over the prior art.

Claims 1-3

D2, D3 and D4 individually teach liners as defined in these claims. Given this disclosure, the choice of the outer volute casing construction to be in the form of axially-split type rather than the radially-split type taught is considered to be a non-inventive design variation in the hands of a person skilled in the art.



DAVIES COLLISON CAVE

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6 May, 2005

The Commissioner of Patents  
WODEN ACT 2606

*Acting as the International Preliminary Examination Authority*

Our Ref: 12272711/ARS/skp

Re: Weir Warman Ltd  
International Patent Application No. PCT/AU2004/001153  
"Pump housing assembly"

Sir,

Reference is made to the Written Opinion which has issued in connection with this International patent application.

We request that the specification and claims be amended in line with the attached Statement of Proposed Amendments.

The claims have been revised so as to more clearly define the invention.

As is discussed in some detail in the patent specification, the present invention is directed to pumps which have an outer casing and an internal liner. The problems associated with centrifugal slurry pumps having what are referred to in the Written Opinion as radially split housings are discussed in detail in the paragraphs 2 and 3 on page 1 of the patent specification.

The invention is concerned with an arrangement in which the liner is supported by the casing and reduces the wear on the liner.

The pump housing assembly of the present invention includes a pump casing comprising two parts which are not radially split and further the liner is a one-piece elastomeric element which has flanges on each side which are adapted to be clamped between the two casing parts when assembled.

None of the prior art discloses or suggests such an arrangement. It is agreed that pumps having a casing of the axially split type are known, however, it is not simply the pump casing which is important to the present invention but its use with a one-piece liner of elastomeric material.

Cited US specification No. 6,582,191 is concerned with the liner for a pump and in particular to the suction branch or discharge branch. It is

Melbourne  
Sydney  
Brisbane  
Canberra

In association with:  
Davies Collison Cave Solicitors  
Intellectual Property Law

6 May, 2005

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unclear whether the liner is one-piece or otherwise. There is certainly no statement in the specification to suggest that it is. Clearly not much weight can be given to the very schematic drawings. Furthermore, the pump casing is precisely the opposite of the type to which the present invention is directed; that is the pump casing is radially split. The specification is directed to an entirely different problem to that which is solved by the present invention. Structurally the assembly as defined in the claims of the present application is quite different to that of the cited document. In addition to the differing features described above, there is no disclosure of a flange arrangement on the liner which is clamped between two parts of the housing as is now defined. The flange in the citation in no way can be compared to that of the present invention.

The reference book illustrates split pump casings of various types. It is noted that all of these are metal and do not have a liner and are made this way due to manufacturing and/or maintenance constraints. There is simply no suggestion of the invention as now defined.

It can be equally said that the remaining prior art documents neither disclose nor suggest the arrangement as now defined.

Favourable reconsideration is respectfully requested.

Yours respectfully  
DAVIES COLLISON CAVE



TONY SMEETON  
[tsmeeton@davies.com.au](mailto:tsmeeton@davies.com.au)  
Enc.

15

AUSTRALIAN PATENT APPLICATION NO. PCT/AU2004/001153

WEIR WARMAN LTD

FIRST STATEMENT OF PROPOSED AMENDMENTS

1. Delete claims page 7 at present on file and replace with new claims page 7 forwarded herewith, together with a marked up copy to show changes.

6 May, 2005

**MARKED UP COPY**

- 7 -

## CLAIMS

1. A pump housing assembly which includes a pump casing and a liner, the pump casing including at least two parts which are adapted to be connected together in an assembled position wherein the pump casing includes opposed front and rear sides, the two parts of the pump casing when in the assembled position have a common junction region which is disposed within one or more planes which pass through the front and rear sides of the pump casing when in the assembled position, the liner being of one piece and of an elastomer material and which includes annular flanges on each side thereof which are adapted to be clamped between the two casing parts in the assembled position.
2. A pump housing assembly according to claim 1 wherein, when in the assembled position, the liner is disposed within the pump casing and forms a pump chamber for an impeller rotatable about a rotation axis which extends between the front and rear sides of the pump casing.
3. A pump housing assembly according to claim 1 or claim 2 wherein the two parts of the pump casing have the common junction region disposed in a plane which is aligned with the axis of rotation of the impeller.
- ~~4. A pump housing assembly according to any preceding claim wherein, the liner is formed of one piece from an elastomer and includes annular flanges on each side thereof which are adapted to be clamped between the two casing parts in the assembled position.~~
54. A pump housing assembly according to any preceding claim 4 wherein the flanges may include sealing portions thereon, the sealing portions being adapted to be received within a cavity formed between the pump casing and a pump end plate assembly.
65. A pump housing assembly according to claim 54 wherein the sealing portion are generally wedge shaped formed integral with the liner and responsive to pressures produced during operation of the pump.

**MARKED UP COPY**

- 8 -

6. A pump housing assembly according to any preceding claim wherein the liner is free of any metal reinforcement.

## CLAIMS

1. A pump housing assembly which includes a pump casing and a liner, the pump casing including at least two parts which are adapted to be connected together in an assembled position wherein the pump casing includes opposed front and rear sides, the two parts of the pump casing when in the assembled position have a common junction region which is disposed within one or more planes which pass through the front and rear sides of the pump casing when in the assembled position, the liner being of one piece and of an elastomer material and which includes annular flanges on each side thereof which are adapted to be clamped between the two casing parts in the assembled position.
2. A pump housing assembly according to claim 1 wherein, when in the assembled position, the liner is disposed within the pump casing and forms a pump chamber for an impeller rotatable about a rotation axis which extends between the front and rear sides of the pump casing.
3. A pump housing assembly according to claim 1 or claim 2 wherein the two parts of the pump casing have the common junction region disposed in a plane which is aligned with the axis of rotation of the impeller.
4. A pump housing assembly according to any preceding claim wherein the flanges may include sealing portions thereon, the sealing portions being adapted to be received within a cavity formed between the pump casing and a pump end plate assembly.
5. A pump housing assembly according to claim 4 wherein the sealing portion are generally wedge shaped formed integral with the liner and responsive to pressures produced during operation of the pump.
6. A pump housing assembly according to any preceding claim wherein the liner is free of any metal reinforcement.

## PCT REQUEST

Original (for SUBMISSION)

|                |                                                                                                                                                |                                                                               |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>0</b>       | <b>For receiving Office use only</b>                                                                                                           |                                                                               |
| <b>0-1</b>     | <b>International Application No.</b>                                                                                                           |                                                                               |
| <b>0-2</b>     | <b>International Filing Date</b>                                                                                                               |                                                                               |
| <b>0-3</b>     | <b>Name of receiving Office and "PCT International Application"</b>                                                                            |                                                                               |
| <b>0-4</b>     | <b>Form PCT/RO/101 PCT Request Prepared Using</b>                                                                                              | <b>PCT-SAFE [EASY mode]<br/>Version 3.50 (Build 0002.162)</b>                 |
| <b>0-5</b>     | <b>Petition</b><br>The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty |                                                                               |
| <b>0-6</b>     | <b>Receiving Office (specified by the applicant)</b>                                                                                           | <b>Australian Patent Office (RO/AU)</b>                                       |
| <b>0-7</b>     | <b>Applicant's or agent's file reference</b>                                                                                                   | <b>12272711/ARS</b>                                                           |
| <b>I</b>       | <b>Title of invention</b>                                                                                                                      | <b>PUMP HOUSING ASSEMBLY</b>                                                  |
| <b>II</b>      | <b>Applicant</b>                                                                                                                               |                                                                               |
| <b>II-1</b>    | <b>This person is</b>                                                                                                                          | <b>applicant only</b>                                                         |
| <b>II-2</b>    | <b>Applicant for</b>                                                                                                                           | <b>all designated States except US</b>                                        |
| <b>II-4</b>    | <b>Name</b>                                                                                                                                    | <b>WEIR WARMAN LTD</b>                                                        |
| <b>II-5</b>    | <b>Address</b>                                                                                                                                 | <b>1 Marden Street<br/>Artarmon, New South Wales 2064<br/>Australia</b>       |
| <b>II-6</b>    | <b>State of nationality</b>                                                                                                                    | <b>AU</b>                                                                     |
| <b>II-7</b>    | <b>State of residence</b>                                                                                                                      | <b>AU</b>                                                                     |
| <b>III-1</b>   | <b>Applicant and/or inventor</b>                                                                                                               |                                                                               |
| <b>III-1-1</b> | <b>This person is</b>                                                                                                                          | <b>applicant and inventor</b>                                                 |
| <b>III-1-2</b> | <b>Applicant for</b>                                                                                                                           | <b>US only</b>                                                                |
| <b>III-1-4</b> | <b>Name (LAST, First)</b>                                                                                                                      | <b>BURGESS, Kevin, Edward</b>                                                 |
| <b>III-1-5</b> | <b>Address</b>                                                                                                                                 | <b>37 Christel Avenue<br/>Carlingford, New South Wales 2118<br/>Australia</b> |
| <b>III-1-6</b> | <b>State of nationality</b>                                                                                                                    | <b>AU</b>                                                                     |
| <b>III-1-7</b> | <b>State of residence</b>                                                                                                                      | <b>AU</b>                                                                     |

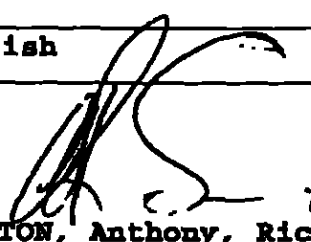
## PCT REQUEST

Original (for SUBMISSION )

|        |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                             |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IV-1   | Agent or common representative; or address for correspondence<br>The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:                                                                     | agent                                                                                                                                                                                       |
| IV-1-1 | Name (LAST, First)                                                                                                                                                                                                                                                                     | SMEETON, Anthony, Richard                                                                                                                                                                   |
| IV-1-2 | Address                                                                                                                                                                                                                                                                                | Davies Collison Cave<br>Level 10, 10 Barrack Street<br>Sydney, New South Wales 2000<br>Australia                                                                                            |
| IV-1-3 | Telephone No.                                                                                                                                                                                                                                                                          | 61 2 9262 2611                                                                                                                                                                              |
| IV-1-4 | Facsimile No.                                                                                                                                                                                                                                                                          | 61 2 9262 1080                                                                                                                                                                              |
| IV-1-5 | e-mail                                                                                                                                                                                                                                                                                 | tsmeeton@davies.com.au                                                                                                                                                                      |
| IV-2   | Additional agent(s)                                                                                                                                                                                                                                                                    | additional agent(s) with same address as first named agent                                                                                                                                  |
| IV-2-1 | Name(s)                                                                                                                                                                                                                                                                                | CARTER, Christopher, John; COWLE, Anthony, John; HEISEY, Ross, Mitchell; HIRD, William; SCHILLING, Frederick Lyle; SMITH, Alistair, James; STEARNE, Peter, Andrew; THOO, Laurence, Wei Yong |
| V      | DESIGNATIONS                                                                                                                                                                                                                                                                           |                                                                                                                                                                                             |
| V-1    | The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents. |                                                                                                                                                                                             |
| VI-1   | Priority claim of earlier national application                                                                                                                                                                                                                                         |                                                                                                                                                                                             |
| VI-1-1 | Filing date                                                                                                                                                                                                                                                                            | 04 September 2003 (04.09.2003)                                                                                                                                                              |
| VI-1-2 | Number                                                                                                                                                                                                                                                                                 | 2003904804                                                                                                                                                                                  |
| VI-1-3 | Country                                                                                                                                                                                                                                                                                | AU                                                                                                                                                                                          |
| VI-2   | Priority document request<br>The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):                                                                                         | VI-1                                                                                                                                                                                        |
| VII-1  | International Searching Authority Chosen                                                                                                                                                                                                                                               | Australian Patent Office (ISA/AU)                                                                                                                                                           |

## PCT REQUEST

Original (for SUBMISSION)

|        |                                                                                                                                      |                                                                                      |                             |
|--------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------|
| VIII   | Declarations                                                                                                                         | Number of declarations                                                               |                             |
| VIII-1 | Declaration as to the identity of the inventor                                                                                       | -                                                                                    |                             |
| VIII-2 | Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent             | -                                                                                    |                             |
| VIII-3 | Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application | -                                                                                    |                             |
| VIII-4 | Declaration of inventorship (only for the purposes of the designation of the United States of America)                               | -                                                                                    |                             |
| VIII-5 | Declaration as to non-prejudicial disclosures or exceptions to lack of novelty                                                       | -                                                                                    |                             |
| IX     | Check list                                                                                                                           | number of sheets                                                                     | electronic file(s) attached |
| IX-1   | Request (including declaration sheets)                                                                                               | 4                                                                                    | ✓                           |
| IX-2   | Description                                                                                                                          | 6                                                                                    | -                           |
| IX-3   | Claims                                                                                                                               | 1                                                                                    | -                           |
| IX-4   | Abstract                                                                                                                             | 1                                                                                    | ✓                           |
| IX-5   | Drawings                                                                                                                             | 4                                                                                    | -                           |
| IX-7   | TOTAL                                                                                                                                | 16                                                                                   |                             |
|        | Accompanying items                                                                                                                   | paper document(s) attached                                                           | electronic file(s) attached |
| IX-8   | Fee calculation sheet                                                                                                                | ✓                                                                                    | -                           |
| IX-17  | PCT-SAFE physical media                                                                                                              | -                                                                                    | ✓                           |
| IX-18  | Figure of the drawings which should accompany the abstract                                                                           | 2                                                                                    |                             |
| IX-20  | Language of filing of the international application                                                                                  | English                                                                              |                             |
| X-1    | Signature of applicant, agent or common representative                                                                               |  |                             |
| X-1-1  | Name (LAST, First)                                                                                                                   | SMERTON, Anthony, Richard                                                            |                             |
| X-1-2  | Name of signatory                                                                                                                    |                                                                                      |                             |
| X-1-3  | Capacity                                                                                                                             |                                                                                      |                             |

## FOR RECEIVING OFFICE USE ONLY

|        |                                                                                                                                         |        |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------|--------|
| 10-1   | Date of actual receipt of the purported international application                                                                       |        |
| 10-2   | Drawings:                                                                                                                               |        |
| 10-2-1 | Received                                                                                                                                |        |
| 10-2-2 | Not received                                                                                                                            |        |
| 10-3   | Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application |        |
| 10-4   | Date of timely receipt of the required corrections under PCT Article 11(2)                                                              |        |
| 10-5   | International Searching Authority                                                                                                       | ISA/AU |
| 10-6   | Transmittal of search copy delayed until search fee is paid                                                                             |        |

## FOR INTERNATIONAL BUREAU USE ONLY

|      |                                                                |  |
|------|----------------------------------------------------------------|--|
| 11-1 | Date of receipt of the record copy by the International Bureau |  |
|------|----------------------------------------------------------------|--|

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below.

IPEA/ \_\_\_\_\_

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and

For International Preliminary Examining Authority use only

|                                                                                                                                                                                                                                                                        |                                                           |                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------|
| Identification of IPEA                                                                                                                                                                                                                                                 |                                                           | Date of receipt of DEMAND                                |
| Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION                                                                                                                                                                                                              |                                                           | Applicant's or agent's file reference<br>12272711/ARS    |
| International application No.<br>PCT/AU2004/001153                                                                                                                                                                                                                     | International filing date (day/month/year)<br>30-Aug-2004 | (Earliest) Priority date (day/month/year)<br>04-Sep-2003 |
| Title of invention<br>PUMP HOUSING ASSEMBLY                                                                                                                                                                                                                            |                                                           |                                                          |
| Box No. II APPLICANT(S)                                                                                                                                                                                                                                                |                                                           |                                                          |
| Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)<br><br>WEIR WARMAN LTD<br>1 Marden Street, Artarmon<br>New South Wales, 2064<br>Australia             |                                                           | Telephone No.:<br>02 65 820510                           |
|                                                                                                                                                                                                                                                                        |                                                           | Facsimile No.:<br>02 65 820510                           |
|                                                                                                                                                                                                                                                                        |                                                           | Email:.                                                  |
|                                                                                                                                                                                                                                                                        |                                                           | Applicant's Reg. No. with the Office                     |
| State (that is, country) of nationality:<br>AUSTRALIA                                                                                                                                                                                                                  |                                                           | State (that is, country) of residence:<br>AUSTRALIA      |
| Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)<br><br>BURGESS, Kevin Edward<br>37 Christel Avenue<br>Carlingford, New South Wales, 2118<br>Australia |                                                           |                                                          |
| State (that is, country) of nationality:<br>AUSTRALIA                                                                                                                                                                                                                  |                                                           | State (that is, country) of residence:<br>AUSTRALIA      |
| Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)<br><br>                                                                                               |                                                           |                                                          |
| State (that is, country) of nationality:                                                                                                                                                                                                                               |                                                           | State (that is, country) of residence:                   |
| <input type="checkbox"/> Further applicants are indicated on a continuation sheet.                                                                                                                                                                                     |                                                           |                                                          |

Form PCT/IPEA/401 (first sheet) (January 2004)

See Notes to the demand form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                 |                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Sheet No. 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                 | International application no.<br>PCT/AU2004/001153                                                                              |
| <b>Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                 |                                                                                                                                 |
| The following person is <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative<br>and <input checked="" type="checkbox"/> has been appointed earlier and represents the applicant(s) also for international preliminary examination.<br><input type="checkbox"/> is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.<br><input type="checkbox"/> is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.                                                                                                                                                                                                                                                                                |                                                                                                 |                                                                                                                                 |
| Name and address: <i>(Family name followed by given names; for a legal entity, full official designation. The address must include postal code and name of country.)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                 |                                                                                                                                 |
| COWLE, Anthony John<br>HEISEY, Ross Mitchell<br>SCHILLING, Frederick Lyle<br>SMEETON, Anthony Richard<br>STEARNE, Peter Andrew<br>CARTER, Christopher John<br>HIRD, William                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DAVIES COLLISON CAVE<br>Level 10, 10 Barrack Street<br>Sydney New South Wales 2000<br>Australia | Telephone No.: (612) 9262 2611<br>Facsimile No.: (612) 9262 1080<br>Teleprinter No.<br>Agent's registration No. with the Office |
| <input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                 |                                                                                                                                 |
| <b>Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                 |                                                                                                                                 |
| Statement concerning amendments:*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                 |                                                                                                                                 |
| 1. The applicant wishes the international preliminary examination to start on the basis of: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> the international application as originally filed           <div style="margin-left: 20px;">             the description <input type="checkbox"/> as originally filed<br/> <input type="checkbox"/> as amended under Article 34           </div> <div style="margin-left: 20px;">             the claims <input type="checkbox"/> as originally filed<br/> <input type="checkbox"/> as amended under Article 19 (together with any accompanying statement)<br/> <input checked="" type="checkbox"/> as amended under Article 34           </div> <div style="margin-left: 20px;">             the drawings <input type="checkbox"/> as originally filed<br/> <input type="checkbox"/> as amended under Article 34           </div> </div> |                                                                                                 |                                                                                                                                 |
| 2. <input type="checkbox"/> The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                 |                                                                                                                                 |
| 3. <input type="checkbox"/> The applicant wishes the start of the international preliminary examination to be postponed until the expiration of the applicable time limit under Rule 69.1(d).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                 |                                                                                                                                 |
| 4. <input type="checkbox"/> The applicant expressly wishes the international preliminary examination to start earlier than at the expiration of the applicable time limit under Rule 54b.1(a).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                 |                                                                                                                                 |
| • Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                 |                                                                                                                                 |
| Language for the purposes of international preliminary examination: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> which is the language in which the international application was filed.<br/> <input type="checkbox"/> which is the language of a translation furnished for the purposes of international search.<br/> <input type="checkbox"/> which is the language of publication of the international application.<br/> <input type="checkbox"/> which is the language of the translation (to be) furnished for the purposes of international preliminary examination.         </div>                                                                                                                                                                                                                                                                                          |                                                                                                 |                                                                                                                                 |
| <b>Box No. V ELECTION OF STATES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                 |                                                                                                                                 |
| The filing of this demand constitutes the election of all Contracting States which are designated and are bound by Chapter II of the PCT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                 |                                                                                                                                 |

**Box No. VI CHECK LIST**

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

For International Preliminary  
Examining Authority use only

|    |                                                                       |   | received                 | not received             |
|----|-----------------------------------------------------------------------|---|--------------------------|--------------------------|
| 1. | translation of international application                              | : | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | amendments under Article 34                                           | : | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | copy (or, where required, translation) of amendments under Article 19 | : | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | copy (or, where required, translation) of statement under Article 19  | : | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | letter                                                                | : | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. | other - <i>Statement of Proposed Amendments</i>                       | : | <input type="checkbox"/> | <input type="checkbox"/> |

The demand is also accompanied by the item(s) marked below:

- |                                                                                          |                                                                                            |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| 1. <input checked="" type="checkbox"/> fee calculation sheet                             | 5. <input type="checkbox"/> statement explaining lack of signature                         |
| 2. <input type="checkbox"/> original separate power of attorney                          | 6. <input type="checkbox"/> sequence listing in computer readable form                     |
| 3. <input type="checkbox"/> original general power of attorney                           | 7. <input type="checkbox"/> tables in computer readable form related to a sequence listing |
| 4. <input type="checkbox"/> copy of general power of attorney: reference number, if any: | 8. <input type="checkbox"/> other (specify):                                               |

**Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

  
**ANTHONY SMEETON**  
 For and on behalf of the applicant/s

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

- |                                                                                                                                                                                                                                            |                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. <input type="checkbox"/> The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.<br><input type="checkbox"/> The applicant has been informed accordingly. | 6. <input type="checkbox"/> The date of receipt of the demand is AFTER the expiration of the time limit under Rule 54bis.1(a) and item 7 or 8, below, does not apply.                        |
| 4. <input type="checkbox"/> The date of receipt of the demand is WITHIN the time limited of 19 months from the priority date as extended by virtue of Rule 80.5.                                                                           | 7. <input type="checkbox"/> The date of receipt of the demand is WITHIN the time limit under Rule 54bis.1(a) as extended by virtue of Rule 80.5.                                             |
| 5. <input type="checkbox"/> Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.                                                   | 8. <input type="checkbox"/> Although the date of receipt of the demand is after the expiration of the time limit under Rule 54bis.1(a), the delay in arrival is EXCUSED pursuant to Rule 82. |

For International Bureau use only

Demand received from IPEA on:

## PATENT COOPERATION TREATY

PCT

NOTIFICATION OF RECEIPT OF  
RECORD COPY

(PCT Rule 24.2(a))

From the INTERNATIONAL BUREAU

To:

SMEETON, Anthony, Richard  
Davies Collison Cave  
Level 10, 10 Barrack Street  
Sydney, New South Wales 2000  
Australia

Date of mailing (day/month/year)

12 October 2004 (12.10.2004)

## IMPORTANT NOTIFICATION

Applicant's or agent's file reference

AU04\_1153

International application No.

PCT/AU2004/001153

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

WEIR WARMAN LTD (for all designated States except US)

BURGESS, Kevin, Edward (for US)

International filing date

: 30 August 2004 (30.08.2004)

Priority date(s) claimed

: 04 September 2003 (04.09.2003)

Date of receipt of the record copy  
by the International Bureau

: 14 September 2004 (14.09.2004)

List of designated Offices

:

AP : BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW

EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP : AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,  
TR

OA : BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

National : AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM,  
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,  
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,  
SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW12272711  
DCC (Sydney)  
Mail Rcvd

20 OCT 2004

AFRM processed by: m

on: 20/10/04

Action: record copy

ack Sydney 12-10-04

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer:

Fiona DOHERTY

Facsimile No. (41-22) 338.87.40

Telephone No. (41-22) 338 9495

## Continuation of Form PCT/IB/301

## NOTIFICATION OF RECEIPT OF RECORD COPY

|                                                                  |                                                    |
|------------------------------------------------------------------|----------------------------------------------------|
| Date of mailing (day/month/year)<br>12 October 2004 (12.10.2004) | IMPORTANT NOTIFICATION                             |
| Applicant's or agent's file reference<br>AU04_1153               | International application No.<br>PCT/AU2004/001153 |

**ATTENTION**

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

☒ time limits for entry into the national phase - see updated important information (as of April 2002)

☐ requirements regarding priority documents (if applicable)

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

**INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE**

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated on the cover sheet of this Notification by paying national fees and furnishing translations, as prescribed by Articles 22 and 39 and the applicable national laws. In addition, the applicant may also have to comply with other special requirements applicable in certain Offices. It is the applicant's responsibility to ensure the necessary steps to enter the national phase are taken in a timely fashion. Most Offices do not issue reminders to applicants in connection with the entry into the national phase.

The applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be 30 MONTHS from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of 18 months from the priority date (see Article 39(1)), but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see PCT Gazette No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the PCT Newsletter, October and November 2001 and February 2002 issues.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limit), Office by Office, refer to the PCT Gazette ("Section IV" part published on a weekly basis), to the PCT Newsletter (on a monthly basis) and to the relevant National Chapters in Volume II of the PCT Applicant's Guide (the paper version of which is updated usually twice a year and the Internet version of which is updated usually on a weekly basis). Finally, a cumulative table of all applicable time limits for entering the national phase is available from WIPO's Internet site, via links from various pages the site including those of the Gazette, Newsletter and Guide, at <http://www.wipo.int/pct/en/index.html>.

Information about the requirements for filing a demand for international preliminary examination is set out in the PCT Applicant's Guide, Volume I/A, Chapter IX. Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

**REQUIREMENTS REGARDING PRIORITY DOCUMENTS**

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled.

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 18 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 18-month time limit (Rule 17.1(a)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 18-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within the time limit which is reasonable under the circumstances (Rule 17.1(c)).

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 18-month time limit (and all other PCT time limits) is the filing date of the earliest application whose priority is claimed (Article 2(xi)(b)).

## PATENT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU

To:

SMEETON, Anthony, Richard  
Davies Collison Cave  
Level 10, 10 Barrack Street  
Sydney, New South Wales 2000  
AustraliaDCC (Sydney)  
Mail Recd.

21 OCT 2004

INFO processed by 1 m  
07/10/04  
Action priority doc act  
app. so entered

|                                                                      |                                                                           |
|----------------------------------------------------------------------|---------------------------------------------------------------------------|
| Date of mailing (day/month/year)<br>12 October 2004 (12.10.2004)     | IMPORTANT NOTIFICATION                                                    |
| Applicant's or agent's file reference<br>AU04_1153                   |                                                                           |
| International application No.<br>PCT/AU2004/001153                   | International filing date (day/month/year)<br>30 August 2004 (30.08.2004) |
| International publication date (day/month/year)<br>Not yet published | Priority date (day/month/year)<br>04 September 2003 (04.09.2003)          |
| Applicant<br>WEIR WARMAN LTD et al                                   |                                                                           |

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- (If applicable) The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- (If applicable) An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

| Priority date             | Priority application No. | Country or regional Office<br>or PCT receiving Office | Date of receipt<br>of priority document |
|---------------------------|--------------------------|-------------------------------------------------------|-----------------------------------------|
| 04 Sept 2003 (04.09.2003) | 2003904804               | AU                                                    | 14 Sept 2004 (14.09.2004)               |

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 338.87.40

Authorized officer

Guido SANVINCENTI

Telephone No. (41-22) 338 8283

From the INTERNATIONAL BUREAU

**PCT**

FIRST NOTICE INFORMING THE APPLICANT OF  
THE COMMUNICATION OF THE INTERNATIONAL  
APPLICATION (TO DESIGNATED OFFICES WHICH  
DO NOT APPLY THE 30 MONTH TIME LIMIT  
UNDER ARTICLE 22(1))

(PCT Rule 47.1(c))

To:

SMEETON, Anthony, Richard  
Davies Collison Cave  
Level 10, 10 Barrack Street  
Sydney, New South Wales 2000  
AUSTRALIE

**IMPORTANT NOTICE**

|                                                                |                                                                           |                                                                  |  |
|----------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------|--|
| Date of mailing (day/month/year)<br>07 April 2005 (07.04.2005) |                                                                           |                                                                  |  |
| Applicant's or agent's file reference<br>12272711/ARS          |                                                                           |                                                                  |  |
| International application No.<br>PCT/AU2004/001153             | International filing date (day/month/year)<br>30 August 2004 (30.08.2004) | Priority date (day/month/year)<br>04 September 2003 (04.09.2003) |  |
| Applicant<br>WEIR WARMAN LTD et al                             |                                                                           |                                                                  |  |

1. **ATTENTION:** For any designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002 (30 months from the priority date), does apply, please see Form PCT/IB/308(Second and Supplementary Notice) (to be issued promptly after the expiration of 28 months from the priority date).

2. Notice is hereby given that the following designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002, does not apply, has/have requested that the communication of the international application, as provided for in Article 20, be effected under Rule 93bis.1. The International Bureau has effected that communication on the date indicated below:  
17 March 2005 (17.03.2005)

CH

In accordance with Rule 47.1(c-bis)(i), those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

3. The following designated Offices, for which the time limit under Article 22(1), as in force from 1 April 2002, does not apply, have not requested, as at the time of mailing of the present notice, that the communication of the international application be effected under Rule 93bis.1:

LU, SE, TZ, UG, ZM

In accordance with Rule 47.1(c-bis)(ii), those Offices accept the present notice as conclusive evidence that the Contracting State for which that Office acts as a designated Office does not require the furnishing, under Article 22, by the applicant of a copy of the international application.

4. **TIME LIMITS** for entry into the national phase

For the designated Office(s) listed above, and unless a demand for international preliminary examination has been filed before the expiration of 19 months from the priority date (see Article 39(1)), the applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be 20 MONTHS from the priority date.

In practice, time limits other than the 20-month time limit will continue to apply, for various periods of time, in respect of certain of the designated Offices listed above. For regular updates on the applicable time limits (20 or 21 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

It is the applicant's sole responsibility to monitor all these time limits.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Dorothee Mülhausen

Facsimile No. +41 22 740 14 35

Facsimile No. +41 22 338 87 40

From the INTERNATIONAL BUREAU

**PCT****NOTIFICATION CONCERNING  
TRANSMITTAL OF COPY OF INTERNATIONAL  
APPLICATION AS PUBLISHED OR REPUBLISHED**

To:

SMEETON, Anthony, Richard  
Davies Collison Cave  
Level 10, 10 Barrack Street  
Sydney, New South Wales 2000  
AUSTRALIE

Date of mailing (day/month/year)  
17 March 2005 (17.03.2005)

Applicant's or agent's file reference  
12272711/ARS

**IMPORTANT NOTICE**

International application No.  
PCT/AU2004/001153

International filing date (day/month/year)  
30 August 2004 (30.08.2004)

Priority date (day/month/year)  
04 September 2003 (04.09.2003)

Applicant

WEIR WARMAN LTD et al

The International Bureau transmits herewith the following documents:



copy of the international application as published by the International Bureau on 17 March 2005 (17.03.2005) under  
No. WO 2005/024243



copy of international application as republished by the International Bureau on under  
No. WO

For an explanation as to the reason for this republication of the international application, reference is made to INID codes (15), (48)  
or (88) (as the case may be) on the front page of the attached document.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.+41 22 740 14 35

Authorized officer

Dorothee Mülhausen

Facsimile No.+41 22 338 87 40

From the INTERNATIONAL BUREAU

**PCT****INFORMATION CONCERNING ELECTED  
OFFICES NOTIFIED OF THEIR ELECTION**

(PCT Article 31(7) and Rule 61.3)

To:

SMEETON, Anthony, Richard  
Davies Collison Cave  
Level 10, 10 Barrack Street  
Sydney, New South Wales 2000  
AUSTRALIE

Date of mailing (day/month/year)  
21 July 2005 (21.07.2005)

Applicant's or agent's file reference  
12272711/ARS

**IMPORTANT INFORMATION**

International application No.  
PCT/AU2004/001153

International filing date (day/month/year)  
30 August 2004 (30.08.2004)

Priority date (day/month/year)  
04 September 2003 (04.09.2003)

Applicant

WEIR WARMAN LTD et al

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

EP: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR

National: BG, CA, CN, CZ, DE, JP, KP, KR, MN, NO, PL, RO, RU, SK, US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

AP: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW

EA: AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

OA: BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

National: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BR, BW, BY, BZ, CH, CO, CR, CU, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MW, MX, MZ, NA, NI, NZ, OM, PG, PH, PT, SC, SD, SE, SG, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

3. Since the election(s) was (were) made after the expiration of 19 months from the priority date, the applicant is reminded that he must, subject to the following paragraph, enter the national phase within 20 months from the priority date (or later in some Offices) before some of the designated Offices in respect of which Article 22(1), as modified with effect of 1 April 2002, does not apply, by paying the national fee(s) and furnishing, if prescribed, a translation of the international application.

However, in respect of most other designated Offices, the time limit of 30 months (or later) may nevertheless apply. See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters, the *PCT Newsletter* and the WIPO Internet site, updated regularly.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Dorothee Mülhausen

Facsimile No.+41 22 740 14 35

Facsimile No.+41 22 338 87 40



| Expediente No |                            | 06-013058      | No de Folio |
|---------------|----------------------------|----------------|-------------|
| Item          |                            | No de unidades |             |
| 1             | CD                         |                |             |
| 2             | DVD                        |                |             |
| 3             | REVISTA                    |                |             |
| 4             | LIBRO                      |                |             |
| 5             | PERIODICO                  |                |             |
| 6             | DISQUETES                  |                |             |
| 7             | SOBRE DE MANILA X          | 7              | ✓           |
| 8             | SOBRE BLANCO TAMANO CARTA  |                |             |
| 9             | SOBRE BLANCO TAMANO OFICIO |                |             |
| 10            | OTROS:                     |                |             |

Observaciones:

CONTIENE ARTA FENAL



# Industria y Comercio

## SUPERINTENDENCIA

SUPERINDUSTRIA Y COMERCIO  
 Radicación : 0641.958 0000000 Folios: 77  
 Fecha (HNO): 2006-02-09 17:00:00  
 Trámite : 011 PCI-PATENT 379 FASE HNCI 411 PRESENTAC  
 Dependencia: 2800 DIVISION DE NUEVAS CREACIONES

**Delegatura de Propiedad Industrial**  
**División de Nuevas Creaciones**

**REQUISITOS NECESARIOS PARA PRESENTACIÓN Y AGILIZACIÓN DEL TRAMITE**

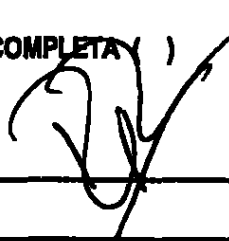
| PATENTE DE INVENCION ( / )                                                             | MODELO DE UTILIDAD ( ) | USUARIO ( ) | RADICADOR ( / ) |
|----------------------------------------------------------------------------------------|------------------------|-------------|-----------------|
| -Indicación de que se solicita la concesión de una patente.                            |                        | ( )         | ( / )           |
| -Datos de identificación del solicitante o de la persona que se presenta la solicitud. |                        | ( )         | ( / )           |
| -Descripción de la invención.                                                          |                        | ( )         | ( / )           |
| -Dibujos de ser estos pertinentes.                                                     |                        | ( )         | ( )             |
| -Comprobante de Pago de las tasas establecidas.                                        |                        | ( )         | ( / )           |
| COMPLETA ( / )                                                                         | INCOMPLETA ( )         | ( )         | ( )             |

| DISEÑO INDUSTRIAL ( )                                                                                       |                | USUARIO ( ) | RADICADOR ( ) |
|-------------------------------------------------------------------------------------------------------------|----------------|-------------|---------------|
| -Indicación de que se solicita el registro de Diseño Industrial.                                            |                | ( )         | ( )           |
| -Datos de identificación del solicitante o de la persona que se presenta la solicitud.                      |                | ( )         | ( )           |
| -Representación gráfica y fotográfica del Diseño Industrial o muestra del Material que incorpora el diseño. |                | ( )         | ( )           |
| -Comprobante de Pago de las tasas establecidas.                                                             |                | ( )         | ( )           |
| COMPLETA ( )                                                                                                | INCOMPLETA ( ) | ( )         | ( )           |

| ESQUEMA DE TRAZADO ( )                                                                 |                | USUARIO ( ) | RADICADOR ( ) |
|----------------------------------------------------------------------------------------|----------------|-------------|---------------|
| -Indicación de que se solicita el registro de Diseño Industrial.                       |                | ( )         | ( )           |
| -Datos de identificación del solicitante o de la persona que se presenta la solicitud. |                | ( )         | ( )           |
| -Representación gráfica del Esquema Trazado.                                           |                | ( )         | ( )           |
| -Comprobante de Pago de las tasas establecidas.                                        |                | ( )         | ( )           |
| COMPLETA ( )                                                                           | INCOMPLETA ( ) | ( )         | ( )           |

Firma Responsable:

Fecha:

  
 \_\_\_\_\_  
 \_\_\_\_\_

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REPUBLICA DE COLOMBIA  
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

Bogotá,  
2020

Doctor(a)  
RODRIGUEZ DILIA MARIA  
Apoderado(a) y/o Representante de  
WEIR WARMAN LTD.

|            |                            |               |
|------------|----------------------------|---------------|
| REFERENCIA | Radicación No.             | 06 13058      |
|            | Solicitud internacional    | AU2004/001153 |
|            | Fecha inicio fase nacional | 04/04/2006    |
|            | Trámite                    | 11            |
|            | Evento                     | 379           |
|            | Actuación                  | 430           |
|            | Oficio No.                 | 5632          |

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, artículo 27 del Tratado de Cooperación en Materia de Patentes (PCT), regla 51 bis del Reglamento y Circular Única de la Superintendencia de Industria y Comercio, se le comunica que:

1. La solicitud no contiene la copia del documento en que consta la cesión del derecho a la patente del inventor al solicitante o a su causante. (Art. 26-k) Decisión 486.

En cumplimiento de lo dispuesto por el artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única No.10 de 2001.

  
DORIS ELENA POLO CORDOBA  
Jefe de la división de Nuevas Creaciones (E)

El anterior requerimiento fue notificado por fijación en lista de fecha 26 MAYO 2006  
adpall